

CIP Partnership Program selected in worldwide contest

T'ikapapa, an initiative of CIP's Papa Andina Partnership Program and the Peruvian INCOPA (potato) platform, has been chosen as one of the finalists in an international contest. Now in its third year, World Challenge 2007 is a global competition that seeks out development projects and businesses that not only make a profit but also put something back into the community. The competition, which is organized by the UK's BBC World and Newsweek magazine, in association with Shell, seeks to reward individuals or groups that truly make a difference through enterprise and innovation at a grass roots level.

T'ikapapa is a marketing concept that links small-scale, resource-poor farmers from the Andean highlands in Peru to expanding urban markets, utilizing potato biodiversity to create new market opportunities. In Peru, T'ikapapa was awarded the Enterprise Creativity Award in 2005. The initiative then went on to gain international recognition after receiving one of the United Nations' 2007 SEED Awards - Supporting Entrepreneurs for Environment and Development.

The T'ikapapa initiative has now been selected as one of the 12 finalists for the 2007 World Challenge award. The World Challenge winner will be selected by popular vote. To view a project profile of each of the 12 finalists go to: http://www.theworldchallenge.co.uk/2007_finalists.php.

A BBC film crew has already visited Peru and the video that they produced on T'ikapapa will be aired on the BBC World satellite channel **Saturday 13 October at 1030 GMT and repeated at 2030 GMT, and on Sunday 14 October at 0230 GMT and 1330 GMT**. The finalists will also be featured in Newsweek magazine during October 2007, with a major story to be published subsequently on the winner. The winning project will be announced at the awards event to be held at The Hague, The Netherlands on 4 December 2007. The awards ceremony will be broadcast on BBC World on 8 and 9 December 2007, and the winning project will be posted on the www.theworldchallenge.co.uk on 10 December 2007.

T'ikapapa requests your support!

We urge you to support T'ikapapa in this contest by voting for the initiative, and encouraging others to do the same. You can vote for T'ikapapa during this period through the World Challenge website: www.theworldchallenge.co.uk/potato.php

Voting will close at 1700 (GMT) on 16 November 2007.

This is a tremendous opportunity to highlight the impact of this highly effective project, and support the continued efforts of the highland communities in Peru. The World Challenge Award would be a wonderful tribute to the original breeders and custodians of potatoes, as we begin the celebration of the International Year of the Potato!





HRH the Princess Royal visits CIP

HRH the Princess Royal, Princess Anne of the United Kingdom, visited the CIP on 9 July 2007. The Princess Royal, who was touring several countries in South America, visited CIP because of her strong interest in agriculture and her well-known concern for the peoples of developing countries.

During the visit, the Princess Royal visited the Biodiversity Complex and saw a display of the valuable biodiversity that CIP safeguards. The Princess Royal was particularly interested in the tremendous varieties of shapes, sizes and colors of the Andean potato varieties. CIP conserves almost 5000 varieties of potato in the largest collection of its type in the world. CIP also conserves thousands of varieties of sweetpotato and little known Andean roots and tubers. The diversity the collection contains will be a valuable source of variation to meet the changed conditions that future climate change will bring.

The Princess Royal, who is particularly interested in the plight of underprivileged children, also heard about CIP's work fortifying sweetpotato with vitamins. In Africa, and on other continents, millions of children are at risk of blindness because their diets are deficient in vitamin A. CIP has developed new varieties of orange-fleshed sweetpotatoes and introduced them into many African countries. They are easy to grow, popular with children and have been proven to increase levels of vitamin A.

While at CIP, the Princess Royal took part in a pachamanca, a traditional Peruvian cooking ceremony. Potatoes, vegetables and different types of meat are cooked with local herbs in a pit in the ground. During the pachamanca, the Princess Royal discussed the work of the Center with CIP staff. Potatoes and sweetpotatoes are some of the most important food crops in the world and especially in the diets and livelihoods of hundreds of millions of people in the developing countries.

The United Kingdom has been a major donor to CIP since 1972, both through core support from the Department for International Development (DFID) and through support of a number of special projects operated by CIP, such as research on potato diseases in Peru and Bolivia, and on developing varieties of orange-fleshed sweetpotato in Africa.



Princess Ann (right) with Pamela Anderson and the UK Ambassador Catherine Nettleton



Professor Jack G. Hawkes: A tribute to a teacher

Professor Jack G. Hawkes died on 6 September 6 2007, aged 92. He was a leading authority on the evolution and genetics of the potato. As a pre-eminent expert in the conservation and utilization of crop plant genetic resources, Prof. Hawkes also made an important contribution to international efforts to improve and conserve the world's food supply. Here, David Tay, Leader of CIP's Division of Genetic Resources and Germplasm Characterization, who was a student of Hawkes, gives a personal impression of the man.

"It was September 1975 in the second floor corridor of the Biological Sciences Building of the University of Birmingham, England that I first met Professor J.G. Hawkes. He was with Sir Otto Frankel, to whom he excitedly introduced me. I was a young man from East Malaysia in Borneo and therefore did not know the two great names. However, in this brief meeting he did convince me to stay in Birmingham to do the classic MSc in Conservation and Utilization of Plant Genetic Resources instead of studying at the University of London or University of Reading where I was also accepted. He was to influence my whole professional career when he offered me a CIP fellowship to study the cultivated diploid potatoes at CIP in Peru under his supervision and that of Professor Carlos Ochoa.

"Professor Hawkes was a true visionary. During the time I met him, he was busy planning and organizing the creation of the International Board for Plant Genetic Resources (IBPGR) and his colleague at the University, Professor J.T. Williams, was to become its first Executive Secretary. IBPGR evolved later into the International Plant Genetic Resources Institute (IPGRI) and recently into Bioversity. While IBPGR was growing, Professor Hawkes was busy training scientists at the University to carry out germplasm conservation work. To date, many of the CGIAR and national genebanks throughout the world are managed by his students or students of his students. He trained trainers and created new generations of plant genetic resources scientists, and played a major role in establishing the science of plant genetic resources conservation as an academic discipline. Plant genetic resources-related courses are currently offered in many universities both in developed and developing countries.

"In potato, Professor Hawkes was the authority in taxonomy and genetic resources for more than half a century. He made many collecting missions in Latin America to study the diversity in both wild and cultivated potatoes. This began with his PhD thesis research on the taxonomy and diversity in potatoes in 1942 at the University of Cambridge and he continued the study at the University of Birmingham from 1952 until he retired in 1982. He played a major role in shaping CIP's program of conservation of plant genetic resources. He supervised more than a dozen MSc and PhD theses in both cultivated and wild potatoes. He and his students, with Professor Ochoa, worked out the evolutionary relationship of the different ploidy cultivated potatoes. The CIP family treasures his contribution and will always remember this work.

"These are only some of his legacies. However, if I am asked to name only one I would say – "Great teacher". Thank you Prof. You had a great run and you were an inspiration."

David Tay, Head, Biodiversity Complex, CIP

"Note: Professor Hawkes touched the lives of many people. I recall many interesting stories relating to the Prof. when talking about potato, genetic resources conservation and Birmingham. I am interested in compiling these stories in memory of Prof. and would like to invite you to write an account of your experience. Please inform others on this. My email is d.tay@cgiar.org and I look forward to hearing from you. Thank you."



Photo courtesy Daily Telegraph, UK.



New leader of CIP's Genetic Resources Conservation and Characterization Division

Dr. David Tay was appointed the new leader of CIP's Genetic Resources Conservation and Characterization Division in July of this year. Dr. Tay is in charge of supervising the maintenance and characterization of the germplasm collections of potato, sweetpotato and Andean root and tuber crops that the Center holds in trust. Moreover, he heads the Biodiversity Complex of CIP and will be overseeing efforts to better understand and enhance the germplasm it contains for improved crop value.

David says he is looking forward to the challenge. "Not only are these very important crops worldwide, but there exist new and exciting ways to conserve them and new techniques and technology to be applied," he explains. He specifically points to cryopreservation, an area that has interested him ever since he obtained his master's degree in science over 30 years ago.

Dr. Tay joins CIP from the USDA Ornamental Plant Germplasm Center in Columbus, Ohio, where as director he was instrumental in establishing the first flower (herbaceous ornamental plant) genebank in the world.

This is not the first time David has been involved in such a feat: he was the driving force in establishing the world vegetable genebank at the Asian Vegetable Research and Development Center (AVRDC). This 30,000-accession genebank includes the World Mungbean Collection, World Pepper Collection, Asia Pacific Sweetpotato Collection and the World Duplicate Collections of Tomato, Chinese Cabbage and Soybean.

In addition to his extensive knowledge in designing, building and equipping genebanks, Dr. Tay brings to CIP 30 years of technical and management experience in agricultural research and development, especially in plant germplasm, seed and crop improvement and production.

The Malaysian-born Tay has working experience in 25 countries around the world and speaks English, Mandarin and southern Chinese dialects fluently, and Spanish and Malay to a lesser extent. David's new appointment brings him back to Lima, where he conducted his dissertation research during the late 1970s.

World first for CIP genebank

The Biodiversity Complex in CIP will be the first genebank in the world to apply an exacting International Quality Standard to its operations. CIP is in the process of implementing a Quality Management System (QMS) covering the acquisition, management and distribution of its germplasm collection, an initiative that will set the standard for germplasm handling in the future.

Quality Management Systems have long been an essential pre-requisite for organizations in fields such as food and environmental control and testing, but the biological and natural resources research sectors have only recently started to establish comparable structures.

In March of this year, CIP decided to formalize the operating procedures of its genebank under a quality system to improve the quality and efficiency of its service to partners and collaborators. The project is being lead by Dr. David Galsworthy, on secondment to CIP from the Central Science Laboratory (CSL) in the United Kingdom. CSL, a UK government agency, is one of the biggest natural resources research institutes in Europe.

The Quality Standard being used to structure the system at CIP is the International Standards Organization (ISO) 17025, which covers the competency of a laboratory. CIP is extending the scope of this standard to cover the complete process of germplasm management.

CIP will be assessed in the early part of 2008 against the requirements of ISO 17025 by experts representing the United Kingdom Accreditation Service (UKAS). After the visit, CIP should be awarded its ISO 17025 accreditation, giving visible recognition to CIP's



genebank users of its superior technical competence.

"This will be the first genebank in the world to have successfully applied this demanding technical quality standard to its work and a major step forward for the confidence in genebanks," says Galsworthy.

The Quality Management System being implemented at CIP aims to effectively manage risk, improve performance, assure the quality of the service provided and formalize systems for staff competence and training. Through the accreditation of these processes, the genebank will gain international recognition.

The Quality Standard has two sections: one covering management requirements and the other technical requirements. Main tasks include formalizing management and information flow structures, documenting all the policies and procedures of the genebank operation, introducing an effective internal audit programme, formalizing staff training and competence, validating methodology and controlling equipment.

"The implementation of the system is progressing well, facilitated by the innovative use of web-based tools to allow cooperative working between the different parts of CIP involved in the process," says Galsworthy. "Staff have been very enthusiastic to help drive the implementation forward and have contributed greatly to the production of the procedures."





Potato Park in Peru conserves diversity

In December 2004, CIP signed an agreement with the indigenous communities in the 12,000-hectare Potato Park in Cusco Department, Peru to provide technical support for the *in situ* conservation of potato biodiversity. The agreement, which is the first of its kind in the world, aims to ensure that the control of genetic resources is kept with local people.

The Potato Park is a one of the few conservation initiatives in the world where the local people themselves are managing and protecting local genetic resources and traditional knowledge about their health, food and agriculture. Alejandro Argumedo, associate director of the NGO Association for Nature and Sustainable Development (ANDES) believes that it could serve as a model for other indigenous communities. "Biological diversity is best rooted in its natural environment and managed by indigenous peoples who know it best," he said.

Under the scheme, CIP scientists and local farmers are working to restore native potato varieties to the area, using virus-free material from CIP's genebank, the world's most comprehensive potato collection. The farmers lost their traditional potato varieties for various reasons, such as disease, migration patterns, genetic erosion and political unrest. To date, almost 300 varieties have been restored to the communities, many of them yielding 30 percent more than potatoes that have not been cleaned of viruses.

About 600 varieties of native potatoes grow in the Park, most of them unique to this habitat. CIP scientists are also using advanced molecular techniques to study the native varieties, because there are strong possibilities that the territory of the Park could be a minor center of origin of the tuber.

Land in the Park ranges between 3,150 m asl and 5,000 m asl. Six Quechua communities live there, the Amaru, Cuyo Major, Chahuaytire, Pampallacta, Para-Paru and Sacaca. Some had been struggling for land tenure for years until ANDES brought them together in this conservation project. Most of the potato production is for self-consumption, although a small part is exchanged for other products through a bartering system that does not involve money. However, CIP, together with ANDES, is promoting a project to identify market niches at the national and international level that add value to native potatoes being sold there and so generate new income for the local people from the Park.

As well as the high diversity of native potatoes and their wild relatives, the Park also produces several traditional crops, as well as featuring beautiful ecosystems both natural and modified, spectacular high-altitude lakes, part of an Inca road and other Inca sites, and many varieties of wild and domesticated flora and fauna.



Potato Park leaders



Landmark publications launched

Late in March 2007, in the Cultural Center of the Catholic University, CIP launched two books that contribute to the fundamental understanding of native potato biodiversity. Both publications are clear examples of the research contribution that CIP is making to the science and traditional knowledge of the potatoes in Peru.

The “Catálogo de Variedades de Papa Nativa de Huancavelica – Perú” documents invaluable indigenous knowledge of wild potato varieties while actually protecting the diversity it describes. The publication combines indigenous knowledge and genomic data into a database that will be invaluable to scientists, breeders and the families of Huancavelica and other farming communities. “It is a unique document, a true communication interface between centuries-old Andean know-how and scientific expertise,” said CIP’s Stef de Haan, who is working with the farmers on the project that gathered the data. “It combines indigenous knowledge and molecular data for the purpose of documentation, protection, benefit sharing and future monitoring.”

Scientists at CIP collaborated with the Federation of Farmer Communities of Huancavelica, eight farmer communities, several local associations and 19 farmer families to collect information about the many hundreds of native potato varieties that make up an important heritage and dietary staple in the Peruvian department of Huancavelica. The catalogue describes 144 landrace varieties but also includes sections describing local farmer’s knowledge as well as a summary in the local Quechua language.

The catalogue also presents an innovative use of an enigmatic Incan recording system. The Incas used lengths of cord called ‘kipus’ to keep records. They would tie pieces of cord on to an original piece, then tie special knots into these pieces in different colors, styles, combinations and positions, to record data.

Reinhard Simon, the head of CIP’s Research Informatics Unit devised with other colleagues a ‘kipu graphic’ to present complex information on identity and diversity, derived from potato genetic microsatellite data. A graphic is drawn for each variety where each cord represents a specific genetic marker. Each knot on each cord represents an allele found with the specific marker. The position of each knot represents the size of the allele in numbers of pairs of DNA bases; the higher up the string, the higher the number of base pairs. While helping to correctly identify the variety in the future, the kipu forms a type of fingerprint, presenting a unique genetic code for each variety with an estimate of its relationship to other entries in a collection.

Another innovative feature of the catalogue is its careful handling of intellectual property. The catalogue captures indigenous knowledge such as medicinal uses and locally recognized resistances. To protect the intellectual property of the farmers, CIP negotiated with the Peruvian Registry of Collective Knowledge and Society for Environmental Law, signed a prior consent agreement with each of the collaborating farmer communities and copublished the book with the Federation of Farmer Communities of Huancavelica. A notice on proprietary rights appears in the book.

This catalogue shows the diversity of native potatoes in a balance between traditional knowledge and the results of scientific investigation. Such a combination makes the catalogue unique, contributing to the understanding of the extensive genetic diversity that the farmers of Huancavelica conserve, as well as blending rich cultural understanding with the results of research.

The second book launched was the English translation of the book “The Potatoes of South America: Peru”, from the internationally recognized Peruvian taxonomist Dr. Carlos M. Ochoa. Originally published in Spanish nine years ago, this classic work offers a meticulous biosystematic description of almost one hundred wild species of Peruvian potatoes. These represent more than 50 percent of the wild species known at present in the American continent. The book summarizes 30 years of intensive collecting of potato plants throughout Peru by Dr. Ochoa, together with the examination of more than 4,000 collections of wild Peruvian potatoes from herbaria all over the world.

In his Preface, Dr. Ochoa writes, “It is the author’s hope that the biosystematics of the



At the presentation, from left to right: Isabel Alvarez, David Talledo, Antonio Brack, Carlos Ochoa, Leoncio Quinto and his children, Stef De Haan, Pamela Anderson, Uriel García and two chopcca translators.



wild potatoes in Peru may prove to be of value to the general scientific community. Peru is the place of origin and domestication of the cultivated potato, as well as the home of its closely related ancestral species." The concentration of information in this book makes it an invaluable reference for all scientists studying the biodiversity of the potato.

See www.cipotato.org/publications to order these books.

Update - International Year of the Potato

Official UN launch of IYP

The United Nations will officially launch the 2008 International Year of the Potato on 18 October 2007 at the UN Headquarters in New York City, as part of the UN World Food Day celebration. The main event will take place from 12:00-13:30. The program will include many high-level UN officials, in particular Mr Ban Ki-moon, Secretary-General. CIP will be represented by Mr. Jim Godfrey, Chair of the Board.

In addition to the main event, there will be a side event from 3:30 to 5:00 pm, with a cocktail reception afterwards. The program is targeted at the international potato community. Mr. Godfrey will give a 20 minute presentation, on behalf of CIP, at the side event. CIP has also been allocated given exhibition space in the UN headquarters to present a display of potato biodiversity.

The Cuzco Conference. Potato Science for the Poor: Challenges for the New Millennium

CIP and the UN Food and Agricultural Organization (FAO) are co-sponsoring a 4-day workshop on 25-28 March 2008 in Cuzco, Peru. This meeting will bring together leaders in the potato and research-for-development communities with the objectives of advancing discussions on how to understand potato science for the poor in today's developing world and how to enhance the impact of potato science in increasing productivity, profitability and sustainability of potato-based systems across the developing world.

Development over the past several decades has resulted in a developing world today that is heterogeneous. We must consider at least three developing worlds: an agriculturally based world, a transforming world and an urbanized world, each of which requires different strategies and tactics for agriculture to contribute to development. The conference will explore the role of potato research and the development of potato-based systems in these three developing worlds over four sessions:

INCREASING POTATO PRODUCTIVITY FOR THE AGRICULTURALLY BASED DEVELOPING WORLD

INCREASING POTATO PROFITABILITY FOR THE TRANSFORMING DEVELOPING WORLD
MEETING FARMER RESEARCHERS AT THE CUZCO POTATO PARK

INCREASING SOCIAL AND ENVIRONMENTAL SUSTAINABILITY OF POTATO-BASED SYSTEMS FOR THE URBANIZED WORLD

See http://www.cipotato.org/Cuzco_conference/index.asp for further details.

Papa Andina

CIP's Partnership Program Papa Andina will work to coordinate regional IYP activities in Bolivia, Peru and Ecuador. The key programmatic activity will be to develop and launch, through a participatory process, a new strategic vision for the potato sector in each country as well as a regional strategy to underline the importance of the potato crop and support policies in favor of the sector. The key cultural activity will be an travelling photographic exhibition that will illustrate the social aspects of the Andean potato sector combined with an artistic vision of the potato based on biodiversity. The photographic exhibition will aim to improve the image and promote potatoes in Bolivia, Ecuador and Peru. The exhibition will travel to Peru, Bolivia and Ecuador, and beyond if other opportunities arise.



CONTACTS

Av. La Molina 1895, La Molina,
Apartado 1558, Lima 12, Peru
Tel: +511 349 6017
Fax: +511 317 5326
email: cip@cgiar.org
www.cipotato.org