

IMPACTS Sweetpotato breeding in Africa for Africa

Fifteen new drought tolerant orange-fleshed sweetpotato (OFSP) varieties were recently released in Mozambique, using an exciting approach designed to radically shorten the time it takes to develop improved varieties. The method, known as “accelerated breeding,” involves rapid multiplication of new varieties using many concurrent sites at early stages in the breeding cycle, rather than using fewer sites over longer time periods.

“Accelerated breeding has meant that we could get the much needed pro-vitamin-A OFSP varieties for fighting severe vitamin A deficiency rates to reach farmers earlier”, says Maria Andrade, a CIP sweetpotato breeder based in Mozambique.

The release of the new varieties was an accomplishment of the breeding component of CIP’s Sweetpotato Action for Security and Health in Africa (SASHA) program. Its aim is to address the need for new varieties suited to various geographic conditions, consumer demands, and farmer preferences (particularly women producers) in different African countries – and to do so more quickly than the usual 7-8 years required.

“We want to revolutionize conventional sweetpotato breeding using accelerated breeding and other advanced breeding methods,” explains Robert Mwangi, a CIP sweetpotato breeder based in Uganda. “We are investing in the development of diverse sweetpotato types that will provide national programs with a wide range of ‘parents’ that have the preferred combination of characteristics to use in their own breeding programs,” he adds.

Mwangi leads one of three SASHA Sweetpotato Support Platforms established in West, Southern, and East/Central Africa to spearhead breeding and seed system improvements for each region. With Wolfgang Grüneberg, a CIP sweetpotato breeder geneticist, other CIP colleagues, and national program partners, Mwangi also is investigating ways to exploit the heterosis of sweetpotato to accelerate the development of improved varieties. The method relies on assembling distinct populations separately for desired characteristics, which when systematically crossed lead to drastic improvements in a target characteristic. Additionally they are developing molecular markers to make it easier and faster to identify plants that have resistance to viruses.

“Our goal is to produce improved sweetpotato varieties in 4 years or less,” says Mwangi. “In Mozambique, we have the target of releasing 20 new varieties by 2013.” The 15 new varieties that were just released are a nice start toward reaching that goal.



CIP's Maria Andrade and OFSP champion, Irene de Souza from USAID, with one of the 15 newly released varieties



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Promoting farming-as-business culture among small-scale producers: A CIP message to the Australian Parliament

It is not enough for farmers to produce more. If they want increased value from their products, they need to learn to “produce for the market.” This was the message shared by Dindo Campilan, CIP’s Regional Director for South, Western, and Central Asia, to the Australian Parliament during a recent international policy conference, organized by the Crawford Fund.

“Farmers must learn to view their farm as a business enterprise that needs to be managed for profit,” explained Campilan to an assembly that included the Australian Minister of Agriculture, Minister of Foreign Affairs, 30 Members of Parliament and their staff, and over 200 other members of Federal and State government, academic institutions, and society or lobby groups.

His presentation underscored that successful farm business requires more than the capacity for technological change. Equally critical is the nurturing of relationships among market chain actors based on trust, collaboration, and coordination.

“Everyday decisions by farmers involve a constant balancing act between preserving and growing their limited assets, between immediate benefits and longer-term returns, and between concrete economic rewards and less tangible values for building social capital,” says Campilan.

CIP’s research for development work in Asia, Africa, and Latin America seeks to enhance the capacity of farmers to both introduce and benefit from market-driven innovations. This is doubly challenging in the case of smallholder producers for neglected and undervalued crops – such as roots and tubers. CIP has had successes in supporting farming communities to use local resources – such as crop genetic diversity and traditional know how – for selling products to elite urban consumers and supermarkets. The challenge is to focus on farmer capacity building for increased production while also using learning approaches that take marketing as the starting point for determining what, how, and for whom to produce.

Adapting methodologies used in the Andes, CIP is piloting a Farmer Business School approach in Indonesia. It combines methodological elements of the participatory market chain approach with the farmer field school. The plan is to step up efforts for further development and wider application of FBS in Southeast Asia and the Pacific.



Boosting synergy and efficiencies with One Corporate System

CIP is among the first three CGIAR centers, joined by the Consortium Office, to begin adopting the One Corporate System (OCS). OCS is a cross-center CGIAR initiative designed to develop a common operational support platform for managing projects, human resources, finances, and other administrative and reporting functions. It will be replacing a variety of locally-supported systems and in-house solutions with a shared business software system.

The impetus for OCS reaches back more than 4 years, when Finance and Administration Deputy Directors from several centers, including CIP, began investigating the potential benefits and added efficiencies that could be gained from adopting a joint system. That potential has become even more important with the advent of the CGIAR Research Programs (CRPs) and demands for greater accountability from funders.

From both the CIP and the CGIAR perspectives, the challenges of meeting our public mandates to help eradicate hunger, reduce poverty, improve health and nutrition, and enhance ecosystem resilience are adding greater urgency to the task. “To meet those complex challenges, we have to be able to work together more effectively than ever before – as a highly functional, interconnected system,” says Lloyd Le Page, CEO of the CGIAR Consortium.



ONE CORPORATE SYSTEM

Dozens of CIP staff from different administrative units have been (and will continue to be) closely involved in identifying and aligning data, processes, terminology, and other details with their cohorts in other centers to prepare for the conversion to the common system. The investment in time, effort, and resources has been considerable.

But early payoffs are already evident. "We've created a true community of practice across centers, involving people from multiple areas of each organization," explains Carlos Alonso, CIP's Executive Director of Strategy and Corporate Development, who has been leading CIP's involvement with OCS. In addition, a detailed review of CIP administrative and program management processes last year highlighted the numbers of steps that could be improved and streamlined through the implementation of an automated system. There are early financial benefits, too. "Calculations indicate that we are saving \$550 thousand per center by purchasing a system jointly instead of individually," says Alonso. "And we'll be achieving significant annual costs savings from a common hosted infrastructure to reduce equipment and maintenance costs," he adds.

Adoption of the new system will clearly require training and new habits on the part of staff across the entire organization. But for those who have been involved in its development, the benefits are worth it. Notes Greg Forbes, a CIP plant pathologist, who has taken part in OCS discussions and demonstrations: "OCS will save me time doing the things I don't want to do, so that I can focus on the scientific work I do want to do."

Incorporating stakeholder perspectives to enhance impacts



How do you create a dynamic, interactive dialogue among 255 stakeholders, across three continents, in less than two months, when the goal is to design a new global program aimed at maximizing impacts across more than five crops? This was the challenge put to the team of collaborators from CIP, Bioversity International, the International Center for Tropical Agriculture (CIAT), and the International Institute of Tropical Agriculture (IITA), which developed the CGIAR Research Program for Roots, Tubers and Bananas for Food Security and Income last year. Their discovery: while not an ideal scenario, the pressures of a tight schedule, coupled with good will and new synergies, can sometimes lead to creative, successful outputs.

The CGIAR's new portfolio of research programs (CRPs) reflects a system-wide ethos that emphasizes proactive consultation with stakeholders for program design and implementation. Putting that principle into practice is described in a new publication, co-authored by collaborators from each of the four centers.

Entitled, "Incorporating stakeholder perspectives in international agricultural research: the case of the CGIAR Research Program for Roots, Tubers and Bananas for Food Security and Income," the publication provides an instructive case-study of successful stakeholder consultation. It describes the process used to engage stakeholders and incorporate their feedback into program design, with lessons learned and experiences that can serve others looking to replicate, adapt, or build upon this example.

"This document not only offers insights on how stakeholder consultation can effectively flag important priorities in the project design phase, but also what methods worked best in achieving quality interaction," says Graham Thiele, who heads CIP's Impact Enhancement Division and formed part of the intercenter group leading the design of the program proposal.

One interesting finding of the case-study regards the effectiveness of different methods for gathering stakeholder input. With limited time and money, stakeholder input was gathered via regional workshops, on-line surveys, and one-on-one interviews, for a total of over 200 participants. Among those methods, the on-line surveys proved to be surprisingly agile and effective for gathering and integrating responses in real time, including "new ideas." Many of the replies were very detailed, novel, thoughtful – and highly useful for the program proposal.

The first centers to implement OCS will be CIP, WorldFish, and the International Rice Research Institute (IRRI), joined by the CGIAR Consortium Office. A second phase will include Africa Rice, Bioversity, the International Center for Tropical Agriculture (CIAT), the International Center for Agricultural Research in the Dry Areas (ICARDA), the World Agroforestry Center, and the International Livestock Research Institute (ILRI).



Research Program on
Roots, Tubers,
and Bananas

Incorporating stakeholder perspectives in international agricultural research: the case of the CGIAR Research Program for Roots, Tubers and Bananas for Food Security and Income is available online at: <http://www.cgiarfund.org/cgiarfund/node/269>

CIP potato clones produce results for heat tolerance and virus-resistance in India

Four CIP clones, field tested over two seasons in the semi-arid agro-ecology of Gujarat, have demonstrated superior tuber yield and high dry matter in short duration– with yields 20-60% higher (51-56 t/ha compared to 35-47 t/ha) than control varieties. This was one of the project results highlighted at the fifth Annual Review Meeting for the Collaborative Project on Potato Improvement in India, which includes CIP, the India Council of Agricultural Research (ICAR), and the Central Potato Research Institute (CPRI). The four clones will now be introduced for region-specific multilocation testing in five locations, with the aim of releasing them the next three years to be used in cereal-based systems.

Further study results indicated selected highland areas that could be used for quality seed production to meet supply needs of local farmers in northeastern India. Another study underscored the potential for extending the testing of varieties with greater heat tolerance into sub-tropical, cereal-based systems further south. These are areas which have not been under potato cultivation traditionally.



ICAR-CIP-CPRI Annual Review Meeting Participants

Exceeding expectations in Eastern Africa

The Wealth Creation Through Potatoes Project in Ethiopia, Kenya, and Uganda has been described as a model project by an FAO monitoring and evaluation consultant, noting that several of its achievements have surpassed their targets. The project had a Steering Committee meeting in Addis Ababa on 23-25 August with participants from Ethiopia, Kenya, and Uganda at which project progress was reviewed. The review revealed that with one more year to go, the project has already exceeded targets for training, the amount of quality seed produced and distributed, and construction and use of diffused light stores.

The purpose of this project is to reduce poverty among target smallholder potato farmers in Ethiopia, Kenya, and Uganda. It includes parallel interventions in seed potato production and marketing, along with the implementation of improvements in ware potato production and marketing chains.

The project review included three site visits to different districts in Ethiopia with the monitoring and evaluation consultant. Two of the site visits coincided with field days, which were filmed and broadcast on national and regional television. In each case, farmers are replacing other crops (e.g., wheat, barley, fava bean) with potato. In one area visited, potato production has increased over 90% since the launch of the project, with all of it planted to improved varieties of CIP origin.

Two farmers, who were interviewed by the media, received training through the project, and one also obtained clean seed from it. Both said that they were expecting yields of 40 to 50 t/ha – a more than five-fold improvement over the national average of 8 t/ha. With plots of about 10 hectares, and prices of seed potato at US\$ 35 per 100 kg, the differences in yield and income promise to be substantial.



Farmer interview

Chinese Minister of Agriculture visits CIP-Lima

Hon. Han Changfu, the Minister of Agriculture of China, visited CIP headquarters on July 27. As he visited CIP's Biodiversity Complex with CIP's Director General, Pamela K. Anderson, they noted that the first signature from a Chinese representative to CIP was dated March 21, 1978. "Our collaboration with China dates back 33 years. So here today we are celebrating a new stage of this rich, long relationship – which is almost as long CIP's own history," commented Dr. Anderson.



Pamela K. Anderson with Minister Han

In a short speech to CIP staff, Minister Han said: "I highly respect and appreciate CIP's achievements, which are of historical importance and have been accomplished through dedication and high scientific standards." He explained that the Chinese Ministry of Agriculture has given great importance to the potato, adding: "We have included this advantageous crop as a priority in our agricultural plan for the medium to long term."

The Minister concluded his comments on a personal note. "In my youth, I, too, cultivated potatoes and my first leadership job was overseeing a potato flour factory. I have such affection for the potato that I just took a photo here at CIP with the Peruvian Potato God."

Nigerian Minister of Agriculture meets with sweetpotato team

Nigeria's new Minister of Agriculture, Akin Adesina, held a meeting with a collaborative sweetpotato team composed of Jan Low and Ted Carey from CIP, Solomon Afuape and Jude Njoku of the National Root Crops Research Institute, and Kabba Joiner and Ima Chima of Helen Keller International. The Minister was accompanied by a six-person technical team led by the Senior Technical Advisor to the Minister of Agriculture, Dr. Adetunji Oredipe. In a highly productive meeting, they discussed why sweetpotato should be considered as a key crop in the agricultural transformation strategy currently being spearheaded by Minister Adesina. The Minister recognizes the great potential of orange-fleshed sweetpotato. He asked the team to develop a proposal for inter-ministerial review, which will hopefully result in the integration of sweetpotato into the country's 4-year national plan for agricultural transformation.



Sweetpotato team meeting with Minister Adesina

National Potato Day - Ecuador

National Potato Days exist in various countries to raise the visibility and profile of potato as a high-value product.

Ecuador celebrated its National Potato Day on June 29. The central event was a Fourth Annual Potato Congress held in Guaranda, Ecuador, which brought together representatives from potato research, production, processing, and marketing. There were dozens of oral presentations, poster sessions, and 3 keynote lectures. A roundtable meeting gathered representatives from potato wholesale markets, industry, producer organizations, and the public sector. They discussed policy recommendations and the need to activate the Program for Productive Development and Strengthening of the Potato Market Chain, which has been passed but not implemented by the national government. CIP was one of the co-sponsors of the congress, along with numerous public and private partners. In addition, CIP held a parallel event to highlight 10 years of contributions by the Papa Andina Initiative to the Andean potato sector.

Potato Congress - China

Xie Kaiyun, liaison scientist from CIP-Beijing, chaired the opening ceremony and Peter VanderZaag, CIP-Board Chair, gave a keynote speech at the 2011 China Potato Congress, held in Yinchuan, Ningxia from July 19 to 22. The congress was presided over by a number of high-level government officials from Ningxia, Buizhou, Qinghai, Inner Mongolia, the Ministry of Agriculture, and the Chinese Academy of Agricultural Sciences (CAAS). There were over 1600 participants from 31 regions of China and eight foreign countries, including CIP staff, led by CCCAP Director, Lu Xiaoping.

VanderZaag's speech reviewed the history of CIP-China Cooperation since 1978. He highlighted the CIP impacts on the development of young scientists in China and projects that have been supported by CIP to strengthen local institutions; introduce new improved varieties; and to boost seed production, cultivation, and post-harvest technologies.

The congress also featured a large exhibit designed by the CIP-Beijing Liaison Office and the Communications and Public Awareness Department in Lima.



Peter VanderZaag presents a keynote address during the opening ceremony of the 2011 China Potato Congress

AWARDS & HONORS **Six Sigma Recognition**



Felipe de Mendiburu, a statistician in CIP's Research Informatics Unit, achieved the first level ("green belt") in the certification examination for Six Sigma process improvement methodology from the American Society for Quality (ASQ). Six Sigma is a formal strategy for quality management, widely used in industry. It incorporates established methodologies to identify and eliminate errors and ensure quality consistency in processes or services. Certification is a mark of excellence. "ASQ certification provides formal recognition of professionals who have demonstrated

an understanding of, and a commitment to, quality techniques and practices to assure product and service quality," explains Jim Rooney, ASQ chair. "This is a great accomplishment and represents a high level of peer recognition."

AWARDS & HONORS **Cartography Prize**

Henry Saul Juarez Soto, Franklin Plasencia, and Stef de Haan won third prize in the International Conservation Mapping Contest – Traditional Cartography Category sponsored by the Society for Conservation Geographic Information Systems (USA). Their submission described work they are conducting in the Peruvian Andes to gather vital information about traditional agricultural methods, varieties of native potatoes grown, and crop rotation in the Peruvian highlands. Their methodology combined high resolution satellite images and participatory mapping with community members in 21 Andean highland communities in the Cusco, Huancavelica, and Junin regions of Peru.



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