

fresh

News from AVRDC – The World Vegetable Center



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AVRDC board transition:
representative from Japan
Naohiro Tsutsumi retires,
introduces Kenichi Okada

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Small spaces, big returns

Growing vegetables
in containers can
improve diets and
raise incomes for
urban residents in
the Philippines



Urban container gardening is an inexpensive way of growing food anywhere in a house using recyclable containers and soil mixed with compost made from household waste. **Perfecto “Jojo” Rom**, a Xavier University graduate in Crop Science, believes the method holds great promise for the Philippines, one of the most rapidly urbanizing countries in the world.

Rom began developing his concept for urban container gardening in 2002, when he was the agronomist-cum-

community organizer of Xavier University’s Peri-urban Vegetable Project, part of the European Union- and German-funded Asia-Urbs Integrated Solid Waste Management and Food Security Project directed by **Robert Holmer**—who today is Regional Director of AVRDC East and Southeast Asia in Thailand.

In a recent article in the Philippine *Business Mirror* by Bong D. Fabe, Robert highlighted the value of Rom’s approach. “For optimum nutrition, vegetables should be



Jojo Rom tends part of his 30-square-meter container garden at his home in Davao City, Philippines. Photo (right) courtesy of Bong D. Fabe, Business Mirror.

fresh when consumed,” Holmer said. “Where refrigeration is limited, production of vegetables near the places they are consumed is an advantage.”

Holmer noted that Rom’s crusade to encourage more urban families to grow their own food has benefits beyond the table. “Biodegradable wastes can be reused as fertilizer and contribute to overall urban environmental management,” he said.

The high cost of fresh produce is one reason why vegetable consumption in the Philippines is the lowest in Asia. According to the

Philippine Association of Nutrition (PAN) and the Food and Nutrition Research Institute (FNRI), the average Filipino household spends more than 40% of its income for food, while the poorest Filipinos allocate almost 60% of their household budget to feed their families.

Home vegetable production can decrease household expenditures on food and also bring in extra income for the family. Rom’s own garden, which he has been tending since 2007, is a good example. “Based on my records, my 30-square-meter container garden’s

average production capacity is 60 kilograms of vegetables a month,” said Rom. “To date, our highest monthly saving on food was P2,000.” He and his family have just started selling their extra harvest this year. “At full production, I can earn a net income of P5,000,” he added.

The family diet has improved with the addition of home-grown vegetables to meals, Rom said. They have a wider selection of nutritious, fresh produce to enjoy, and peace of mind from knowing the food was grown without harsh chemical pesticides.



Almost any type of container can be used for growing vegetables: plastic bottles and bags, large food cans, flower pots, wooden boxes, pails, buckets, baskets, drums, and nursery flats. Drainage is important. In the center photo, drainage holes are made in the bottom of a plastic bottle; the top is cut off and placed inside the bottle over the holes. This helps to provide air to the roots.

Rom is active in several urban container gardening initiatives around the Philippines, and he has been invited to lead training courses on the topic in Thailand and Australia.

Jojo will test some of AVRDC's improved sweet pepper, chili and high beta-carotene tomato lines in his container garden. The lines have multiple disease resistance, are adapted to the hot climate of the tropical lowlands, and are nutrient-dense.

"Admittedly, not everyone is interested in agriculture, our parents and fore-parents inculcated in us the idea that it is a profession of burden and punishment," said Rom, who spends about 14 hours a week working in his garden. "In the provinces, we hear many parents tell their children, 'if you won't do well in school, you stop and work on the farm all your life.'" If Jojo Rom has his way, urban container gardening will become second nature to Filipinos—a means for personal accomplishment, improved income, and good health, and source of national pride in managing waste for a cleaner, more sustainable environment.



Read more...

Business Mirror



<http://businessmirror.com.ph/component/content/article/53-agri-commodities/15099-xu-graduate-practices-urban-farming-to-answer-food-issues>

Container Gardening: A Way of Growing Vegetables in the City, by Kilian Deveza and Robert Holmer

http://puvep.xu.edu.ph/publications/container_gardening.pdf



Goodbye and hello



(top-left): Naohiro Tsutsumi (r), former representative for Japan on the AVRDC Board of Directors, now acting Director of the Third Country Assistance Planning Division, International Cooperation Bureau of the Ministry of Foreign Affairs, and Kenichi Okada (l), Director General Designate of the Japan Interchange Association Taipei Office planting a Madagascar Almond tree on the AVRDC campus.

(top-right): Naohiro Tsutsumi looks into a beaker to determine the presence of bacterial infection in a tomato at the Center's Demonstration Garden.

(left): Greg Luther (l), Head of Global Technology Dissemination briefs Kenichi Okada (third from left) in the Demonstration Garden.

AVRDC recently bid farewell to friend and supporter **Naohiro Tsutsumi**, Japan's representative on the AVRDC Board of Directors. Mr. Tsutsumi was Director General of the Japan Interchange Association Taipei Office. He will return to Japan to take up a new post as Director of the Third Country Assistance Planning Division, International Cooperation Bureau of the Ministry of Foreign Affairs.

Mr. Tsutsumi visited Center headquarters on 12 August 2011 to

introduce his successor on the board, **Kenichi Okada**, Director General Designate of the Japan Interchange Association Taipei Office. Mr. Tsutsumi and Mr. Okada were warmly welcomed by AVRDC management and scientists.

Director General Dyno Keatinge gave a presentation to introduce the Center's research programs and activities to Mr. Okada. At the genebank, **Andreas Ebert**, Head of Genetic Resources and Seed, explained the various processes

involved in collecting and characterizing germplasm. **Greg Luther**, Head of Global Technology Dissemination, led a tour through the Demonstration Garden, where more than 60 indigenous vegetable species, improved vegetable lines, and selected technologies are on display. **Deng-lin Wu**, Garden Manager, demonstrated the benefits of tomato grafting to the visitors.

Visitors

Visitors from Enza Zaden, an international vegetable seed breeding company, visited AVRDC East and Southeast Asia in Thailand on 22 August 2011.

Joep van Balen, Product Development Manager, Asia and **Fu Jiqin**, Breeder from the company's Guangdong, China R&D Station, met with **Narinder Dhillon**, AVRDC Cucurbit Breeder, who explained the Center's cucurbit breeding activities and conducted a field visit. Enza Zaden has a strong bitter melon and pumpkin breeding program in southern China. Joep and Fu inquired about the germplasm



(left to right) **Joep van Balen**, **Narinder Dhillon**, and **Fu Jiqin** in the cucurbit fields.

composition of the Center's cucurbit breeding project, breeding progress, strategy, what's in the breeding pipeline, and germplasm resistant to viruses and powdery mildew. Narinder discussed possible

areas of cucurbit research collaboration with AVRDC.



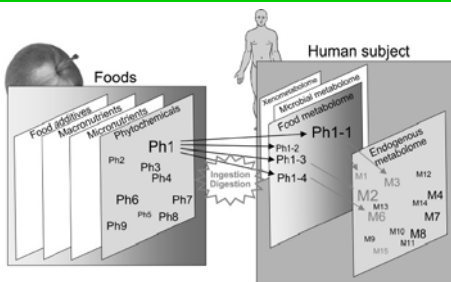
Tran Kim Cuong (I), Head of the Vegetable Department, Southern Horticultural Research Institute (SOFRI) Vietnam, toured AVRDC headquarters in Taiwan on 25 August 2011 to learn about the Center's programs in Asia and to meet with breeders, genebank staff, and the Global Technology Dissemination group. She hopes to establish closer connections between the two institutions.



Yu-hsia Huang leads a tour of the Demonstration Garden.

A group of **16 vegetable researchers** from the People's Republic of China toured the Center on 24 August 2011 as guests of the **Tasan Seed Company**, Taiwan. The Center's Demonstration Garden, where more than 60 types of indigenous vegetables are grown, was of particular interest to the visitors. **Yu-hsia Huang** explained the uses of various plants and introduced several of the Center's production technologies, including grafting chambers and low-cost microirrigation.

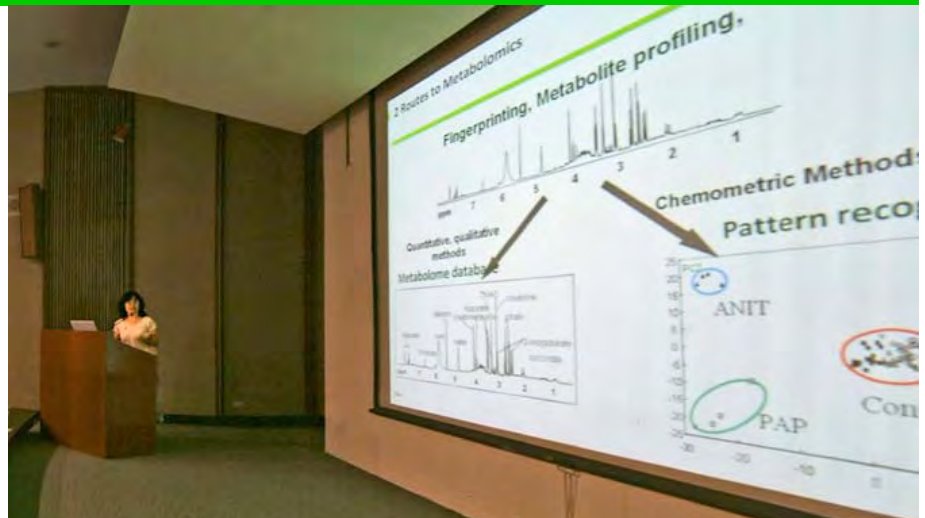
Seminars



The Center launched a new **Thursday Morning R&D Seminar Series** at headquarters on 18 August 2011. Nutritionist **Ray-yu Yang** gave the inaugural presentation on AVRDC's vegetable metabolome initiative.

Metabolomics is the systematic study of the unique chemical fingerprints of specific cellular processes. It gives a better understanding of how an organism responds or a tissue works in a particular environment. Metabolomic research—such as the Center's current Bitter Gourd Project and work with Taiwan's National Science Council on the variation of phytochemicals in vegetables affected by different seasons and cooking methods—will help to link vegetable consumption to health outcomes. The approach also has applications in uncovering hidden phenotypes in breeding and revealing biochemical markers related to the way plants react to heat, drought, pathogens, and other stressors.

On 25 August 2011, **Daniel Ponnath**, a landscape gardener from Germany with a strong interest in ecologically sound cultivation practices, completed a six-month internship in entomology with his presentation on the genetic diversity of eggplant fruit and shoot borer (EFSB);



(Top): **Ray-yu Yang**, AVRDC Nutritionist, gave the inaugural presentation to colleagues.

(Bottom): After his seminar, **Daniel Ponnath** received an internship certificate from Director General Dyno Keatinge.

Leucinodes orbonalis) populations in South and Southeast Asia. Eggplant is an important vegetable for Asia's farmers and about one-third of the cost to produce the vegetable is spent on pesticides. Sex pheromone traps can be effective as part of an integrated pest management strategy, but sex pheromones are species-specific. To determine if pest populations from India, Lao PDR, Philippines, Taiwan, Thailand, and Vietnam

were similar, Daniel used DNA analysis to identify three groups of *L. orbonalis* and confirm the homogeneity of this pest.

The Center in the news

Staff members at **AVRDC East and Southeast Asia**, Thailand have been busy this month fielding reporters' questions and guiding video cameras to the proper angles for the best shot. On 12 August, the *Daily News* newspaper and website published a report with Regional Director **Robert Holmer**, who discussed the Center's activities and accomplishments in Thailand and beyond. A week later, Thai TV3 visited the Center's Research and Training Station at Kamphaeng Saen on the Kasetsart University (KU-KPS) campus, where Robert, Research Assistant **Somchit Pruangwitayakun**, and field staff gave a step-by-step demonstration of vegetable grafting methods. Grafting pepper, tomato, and cucurbit scions on to selected rootstocks of vegetables resistant to flooding and soil-borne diseases will allow farmers to harvest good crops in Thailand's tropical climate.



<http://www.dailynews.co.th/web/index.cfm?page=content&categoryId=340&contentId=156574>



See the video on the World Vegetable Center's YouTube channel:

<http://www.youtube.com/user/WorldVegetableCenter>



Pishayapa "Bee" Thongmalai (right), East and Southeast Asia Office Assistant, and **Robert Holmer**, Regional Director (second from right) with a couple from Nakhon Pathom, Thailand who read the newspaper article and stopped by the office to learn more.

Thanks to **Jureerat Leesmidt**, Associate Professor in Molecular Genetics at Kasetsart University, and **Wut Amphan**, Public Relations Officer, KU-KPS who arranged the interviews for the AVRDC team.



Monitoring mungbean across India



Bui Huyen conducting artificial hybridization in mungbean at AVRDC South Asia, Hyderabad.

Bui Huyen's mungbean research has brought her from one end of India to the other, with a few stops in between. Huyen, from the Plant Resources Centre, Hanoi, Vietnam, and the recipient of the 2011 Vavilov Frankel Fellowship awarded by Bioversity International, is currently carrying out a study entitled "Identification of the causal agent of mungbean yellow mosaic disease in Vietnam and resistance screening of the Vietnamese mungbean germplasm collection" which initially took her to **AVRDC's South Asia** office in Hyderabad, India. During her two-month stay in India, she

phenotyped mungbean plants for reaction to mungbean yellow mosaic disease at Punjab Agricultural University, Ludhiana in the north, examined diseases

affecting mungbean seed production plots at the National Pulses Research Centre, Vamban, Tamil Nadu in the south, and explored artificial hybridization of mungbean at AVRDC in Hyderabad. Next on Huyen's itinerary: a 1-month stay in September 2011 at AVRDC headquarters in Taiwan to learn about DNA extraction for DAR_T analysis from the Biotechnology and Molecular Breeding team; serological and molecular virus diagnostics and resistance screening for mungbean yellow mosaic virus from Virology; and safe management of mungbean

germplasm resources in Genetic Resources and Seed. Huyen will then spend a month at the Department of Employment, Economic Development and Innovation (DEEDI), Queensland Government, Warwick, Queensland, Australia to become acquainted with the mungbean breeding program at Warwick (near Canberra), including the analysis of a mungbean DAR_T set with samples from Vietnam, AVRDC and Australia; applied examples of DAR_T analysis from the DEEDI sorghum breeding program; one week at the genebank in Biloela to learn about the handling of crop wild relatives of mungbean, soybean, etc.; and one week at DEEDI's virology lab in Brisbane. Huyen also hopes to visit Dr. Kilian's Diversity Arrays Lab in Canberra and to meet with a Vietnamese colleague there who is developing a protocol for DAR_T analysis for soybean and mungbean. Her fellowship is supported by the Grains Research and Development Corporation (GRDC), Australia.



(l): **Bui Huyen** (in red hat) examining disease affected mungbean seed production plots at National Pulses Research Centre, Vamban, Tamil Nadu. (r): **Bui Huyen** phenotyping mungbean plants for reaction to mungbean yellow mosaic disease in Punjab Agricultural University, Ludhiana.

Horti Asia 2012



Soopachai Barnpubtong (middle), Thailand's Deputy Permanent Secretary, Ministry of Agriculture, with Horti Asia 2012 organizers and supporters.

Horti Asia 2012 at the Bangkok International Trade and Exhibition Center (BITEC), Bangkok.



Horti Asia, an international tradeshow for horticultural and floricultural production and processing technology, will be held from 9-11 May 2012 in Bangkok. About 150 international exhibitors and more than 8,000 visitors from around the world are expected to attend. The Center is an official supporter of the event. Horti Asia 2012 will draw attention to the economic impact of the region's rapidly expanding horticulture and floriculture sectors, and bring together buyers and sellers of production, postharvest and processing technologies.

On 23 August 2011, AVRDC – The World Vegetable Center, represented by Regional Director

Robert Holmer, participated in a press conference to promote

Kola visits Thailand

Kolade Olatifede, Director of Finance, visited **AVRDC East and Southeast Asia** in Thailand from 26-30 July 2011 to see the progress of the infrastructure investments implemented with financial support of Taiwan's **Ministry of Foreign Affairs** and to give a seminar to further enhance the Maconomy capabilities of staff. Maconomy is the Center's enterprise resource planning program.

Kola also attended a community meeting in Kamphaeng Saen for the **9 BOWON** project, an integrated community development project of Kasetsart University initiated by **Sombat Chinawong**, KU Vice President, Kamphaeng Saen campus. The project will cover nine schools, nine villages, and nine temples in Kamphaeng Saen



district, Nakhon Pathom province. AVRDC will assist the project in capacity building and the development and promotion of home and school gardens.

(left to right) **Kola Olatifede**, **Robert Holmer**, and **Sombat Chinawong** at the 9 BOWON meeting.

For more information on the 9 BOWON project, contact Pongpan Luengwilai, Coordinator, email: kpspl@ku.ac.th

Nutrition Week in Mali



(l): Leaflet promotes the need for vitamin A; (r): Children taking their doses of vitamin A.

Twice a year the Nutrition Division of the Ministry of Health in Mali organizes a **Nutrition Week** in partnership with the United Nations Children's Fund (UNICEF), Helen Keller International, and the United States Agency for International Development (USAID) Health Program. Nutrition Week combines interventions to directly improve the health of Malians and information to raise awareness and knowledge of nutritional issues.

This intensive activity is conducted nationwide in health centers and rural and urban communities. All households, administration centers, and religious authorities were informed by local radio about the objectives of Nutrition Week for 4-12 July 2011.

AVRDC Mali staff participated in a morning session at a communal health center. Mothers brought in their children for vaccinations, and de-worming to help reduce anemia. Women discussed birth control with midwives and doctors. Men and women received information about the necessity of vitamin A in the diet; the midwife used pictures



(Top): Group session on nutrition.

(Bottom): Women discuss nutrition for the health of children and mothers.

to explain the importance of including nutrient-rich vegetables in the family's daily diet. During Nutrition Week vitamin A capsules were distributed to every child from 6 to 59 months and to mothers 40 days after childbirth. The effort is an essential part of the national strategy for micronutrient supplementation to decrease vitamin A deficiency and reduce the high risk of child mortality.

The Center's staff also accompanied two nutrition volunteers on their rounds to visit women and children in a newly constructed district of Bamako. The volunteers discussed breastfeeding, complementary feeding of children over six months, and iron requirements for pregnant women.

Using a wedding feast as an example to explore nutrition, the AVRDC team asked the women to consider the foods they would prepare together for guests at a marriage ceremony, including high beta-carotene golden tomatoes, okra rich in vitamin A, and local mangoes, an excellent source of vitamins A and C. Amaranth was mentioned as a source of iron for children and pregnant women.

AVRDC will participate in the evaluation of Nutrition Week, and will develop a strategy with the Ministry of Health to strengthen communication activities to ensure families understand how to prepare well-balanced, hygienic meals.

-- Theresa Endres
Community Development Specialist
Nutrition

40 years of service to tropical agriculture



Four decades ago, a research and development institute dedicated to alleviating poverty and malnutrition in Asia by increasing the supply and quality of vegetables was established in Taiwan. Today, AVRDC – The World Vegetable Center operates on a global scale across Asia, Africa, and Oceania. In future issues of Fresh we will track the Center's long and fruitful history through photos.



Kil Sun now, and below as a trainee in 1981.

AVRDC's training programs have borne valuable fruit over the decades. After 30 years, **Kil Sun Yoo**, Associate Professor in the Vegetable and Fruit Improvement Center, Department of Horticultural Sciences, Texas A&M University USA, returned to AVRDC headquarters on 26 August 2011 to meet with staff and give a

seminar on phytochemical research for developing fruit and vegetables with improved health benefits. Dr. Yoo was an AVRDC trainee from September 1981-February 1982 in the plant physiology lab, working under advisor George C. Kuo; he studied the effect of flooding and mulching on Chinese cabbage growth and development. His work at the Center sparked a lifelong interest in how carotenoids, flavonoids, anthocyanins and other phytochemicals affect human health, and led to a career in identifying and analyzing phytochemicals for horticulture. Dr. Yoo was part of the team that developed the BetaSweet carrot, a maroon-colored carrot high in carotenes and anthocyanins. His current research involves surveying Swiss chard for its antioxidant qualities. Welcome back, Kil Sun!



*inside
insight*

World Kitchen Garden Day: August 28



World Kitchen Garden Day, recognized each year on the 4th Sunday of August, celebrates food produced on a human scale. It is an opportunity for people around the world to gather in their gardens with friends, family, and members of their local community to share in the multiple pleasures and benefits of home-grown foods.

Kitchen Gardeners

International, a nonprofit organization founded in Maine, USA with a mission to empower individuals, families, and communities around the world to achieve greater levels of food self-reliance through the promotion of kitchen gardening, home cooking, and sustainable local food systems, initiated World Kitchen Garden Day in 2003. The event is a response to "Snack Food Month" organized by the International Snack Food Association each

February. The thinking was that if manufacturers of potato chips, pretzels and cheese doodles could spend 28 days and millions of dollars promoting their foods, the world's kitchen gardeners should be able to have at least a day for celebrating theirs.

World Kitchen Garden Day aims to:

- celebrate the positive role of kitchen gardens in society, health, and gastronomy
- raise awareness about the benefits of eating local and to encourage people to explore local food options in their areas
- build community spirit, at local and international levels, around the universal experiences of gardening, cooking, and eating

Kitchen Gardeners International encourages people everywhere to mark the day in their own way: with a harvest or planting party, a taste test of kitchen garden produce, a gardening class, or other event.

**World Kitchen Garden Day:
28 August 2011**

[http://kitchengardeners.org/
world-kitchen-garden-day](http://kitchengardeners.org/world-kitchen-garden-day)