fresh

News from AVRDC – The World Vegetable Center

23 September, 2011

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First module of international training course opens

AVRDC's **30th International Vegetable Training Course**, "Vegetables: From Seed to Table and Beyond" officially opened on 12 September 2011 at AVRDC East and Southeast Asia's Research and Training Station, located on the Kamphaeng Saen campus of Kasetsart University (KU), Thailand. A total of 14 participants from 8 countries are enrolled in Module 1, "From Seed to Table."

(Clockwise): Trainees visit the Tissue Culture Lab, Kasetsart University, Kamphaeng Saen campus; at the Entomology Lab, AVRDC East and Southeast Asia; on a courtesy call to **Sombat Chinawong**, KU Vice President; attending the Farmer Field School lecture.

They hail from government agencies, nongovernmental organizations, universities, research institutes, and the private sector from Bangladesh, Cambodia, Netherlands, Nepal, India, Indonesia, Papua New Guinea, Singapore and Venezuela.

After Regional Director **Robert Holmer** welcomed the participants, Administrative and Training Officer **Sheila de Lima** and Assistant to the Regional Director **Steve Kebasen** provided an orientation on the course content and facilities available on the KU campus, such as the canteens, library and various laboratories. Highlights of the first days in Thailand included a courtesy call to **Sombat Chinawong**, KU Vice President, Kamphaeng Saen campus, and the welcome dinner—complete with a karaoke session.

Lecturers from AVRDC, Kasetsart University, Thailand's Department of Agriculture and Agricultural Extension, the Asia Pacific Seed Association, the Asian Institute of Technology and the private sector will share their knowledge on the essentials of integrated vegetable production within the framework of Good Agricultural Practices (GAP) with particular emphasis on vegetable breeding, seed production, seed health, and seedling management. Learning will be through a balanced mix of lectures, hands-on exposure, group discussions, laboratory sessions, and field trips. In cooperation with Thailand's Ministry of Agriculture, the participants will learn how to facilitate and manage farmer education programs by joining an actual Vegetable Farmers' Field School every week.

Module I will end on 7 October 2011, when the participants will present action plans to show how they intend to implement their newly acquired skills and knowledge back home.

Don't Delay -- Register Today!

A few spaces are available for Modules II and III:

Module II: From Harvest to Table

10 October - 4 November 2011

Module III: Vegetables for Sustainable Development

7 November - 2 December 2011

CONTACT:

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Module I Participants
"From Seed to Harvest"
12 September to 7 October 2011

Mahamud Hossain Al-Mamun (Bangladesh)

Present Job/position: Scientific Officer, Olericulture Division

Employer: Bangladesh Agricultural Research Institute (BARI)

Main responsibilities: Planning, designing and implementing research on vegetable crop production, variety development, crop management and technology dissemination.

Hugo Ramirez Guerrero (Venezuela)

Present Job/position: Associate Professor of Olericulture and Ecological Agriculture

Employer: Universidad Centroccidental Lisandro Alvarado (UCLA), Venezuela

Main responsibilities: Lecturer, horticultural research and extension work.

Mohammad Amdadul Haque (Bangladesh)

Present Job/position: Scientific Officer

Employer: Bangladesh Agricultural Research Institute, Gazipur, Bangladesh

Main responsibilities: Planning, designing and implementing research on vegetable crop production, variety development, crop management and technology dissemination.

Ramimun Akther (Bangladesh)

Present Job/position: Senior Plant Breeder

Employer: GETCO Agro Vision Ltd.

Main responsibilities: Development of vegetable hybrid varieties, seed production, research planning, supervision of crop management.

Md. Faruk Hossain (Bangladesh)

Present Job/position: Scientific Officer

Employer: Bangladesh Agricultural Research Institute, Gazipur, Bangladesh

Main responsibilities: Planning, designing and implementing research on vegetable crop production, variety development, crop management and technology dissemination.

Abu Zafar Md. Khorshed Alam Chowdhury (Bangladesh)

Present Job/position: Senior Plant Breeder

Employer: Previously with Lal Teer Seed Ltd, Gazipur, Bangladesh

Main responsibilities: Hybrid development, conduct training on crop production, research planning and management.

Abul Monsur (Bangladesh)

Present Job/position: Senior Product Executive, Seed

Employer: ACI Limited

Main responsibilities: Product development, training for farmers, training, retailers, and dealers training, product promotion

Saurabh Rathi (India)

Present Job/position: Director

Employer: Chhattisgarh Investments Ltd.

Main responsibilities: Management of 1,000-acre vegetable farm in Raipur, India

Mohammed Khalid Akbar (Bangladesh)

Present Job/position: Assistant Manager, Stock Seed Production

Employer: Lal Teer Seed Limited

Main responsibilities: Stock seed production, maintenance breeding, parent multiplication and hybridity test

Marijn Zandee (The Netherlands)

Present Job/position: Ecosan and urine use researcher

Employer: EAWAG-SANDEC

Main responsibilities: Scientific research into producing struvite fertilizer from human urine and the treatment or reuse of nitrogen-rich effluent; also working on combination of drip irrigation and urine fertilization.

Keo Chenda (Cambodia)

Present Job/position: Agriculture Advisor

Employer: Cambodian Agricultural Value Chain program

Main responsibilities: Horticultural technology transfer, extension.

Philmah Seta-Waken (Papua New Guinea)

Present Job/position: Junior Project Scientist (Agronomy/Plant Breeding)

Employer: National Agriculture Research Institute, PNG

Main responsibilities: Vegetable research (production and plant breeding).

Evy Latifah (Indonesia)

Present Job/position: Junior Researcher

Employer: Institute for Agricultural Technology East Java

Main responsibilities: Conducting research and assessment.

Chen Yew Luen (Singapore)

Present Job/position: Senior Technologist

Employer: Agri Food and Veterinary Authority of Singapore

Main responsibilities: Research and development on containerized farming systems and variety trials, horticultural services and transfer of technology through training for vegetable farming enterprises.

Bees benefit cucurbit breeding trials

Cucurbits breed by cross-pollination and honey bees are the main pollinators. When **Narinder Dhillon**, AVRDC Cucurbit Breeder, **Supunsa Phethin**, Research Assistant and **Sanan Rewthongchum**, Field Supervisor set up cucurbit trials at AVRDC East and Southeast Asia's research farm on Kasetsart University's Kamphaeng Saen campus, they observed that few bees were active in the area. The lack of bees to pollinate cucurbit flowers reduced the natural fruit set of bitter gourd and pumpkin.

To address this constraint, three honey bee (*Apis mellifera*) colonies from Chiang Mai, northern Thailand were established on the research farm earlier this year. The bees have been busy: the research team noticed plants in the cucurbit trials are producing more fruit. Improved pollination optimizes the yield potential of breeding lines; breeders can then select the very best plants to use in breeding for enhanced marketable yield.

At a meeting of the British Ecological Society held at the University of Leeds on 7-10 September 2010, Parthiba Basu, a researcher at the Ecology Research Unit, University of Calcutta, reported shrinking vegetable production in India due to a decline in the population of bees and butterflies. She attributed the pollination crisis to overuse of pesticides and vanishing wilderness habitat, and noted that with fewer vegetables available for purchase, people's diets may become less nutritious. Global economic value of the pollination service provided by insect pollinators, honey bees mainly, was Euro 153 billion in 2005 for the main crops that feed the world (Science Daily, 2008) and fruits and vegetables were especially affected with a loss estimated at Euro 50 billion each, due to decline of pollinators.

KURDI KPS @ 5

Heartfelt congratulations to **Kasetsart University Research and Development Center (KURDI)** at Kamphaeng Saen, which celebrated its fifth anniversary on 6 September 2011 at Kasetsart University's Kamphaeng Saen campus, Nakhon Pathom, Thailand! All centers under KURDI showcased their on-going research and development activities in a display to mark the milestone. AVRDC thanks KURDI for their continuous support and looks forward to more collaborative projects in the future.

Read more:

http://rdi.ku.ac.th/eng/index_eng.htm

http://www.webportal.ku.ac.th/rdikps/eng/

(Left - l to r): Sirikul Wasee, Director, Tropical Vegetable Research Center (TVRC), **Uthairat Na-Nakorn**, Director, Kasetsart University Research and Development Center (KURDI), and **Robert Holmer**, AVRDC-ESEA Regional Director. **(Right - l to r): Sirikul Wasee**, **Pissawan Chiemsombat**, Director, KURDI-Kamphaeng Saen, and **Robert Holmer** in front of TVRC's display booth.

Indigenous vegetables you should know

High in ascorbic acid (one form of vitamin C) and antioxidants, the seedlings, tender leaves and shoots of beautiful **Cluster mallow** (*Malva verticillata*) can be eaten fresh, stir-fried, pickled or in soups.

AVRDC conserves a collection of more than 10,000 indigenous vegetable species—plants with the potential to improve diets, health and livelihoods around the world.

USAID India visits AVRDC East and Southeast Asia

Srivalli Krishnan, Project Management Specialist of USAID India's Food Security Office in New Delhi visited AVRDC East and Southeast Asia in Bangkok, Thailand on 16 September 2011 to discuss updates on USAID's Feed the Future Program with ESEA Regional Director **Robert Holmer** and explore potential areas for future collaboration.

Dr. Srivalli sees particular potential in vegetable home gardens developed by AVRDC in Jharkhand, India for food and nutrition security because the gardens make nutrient-rich vegetables readily available, accessible and affordable to families.

Other areas discussed were AVRDC's capacity-building activities, such as the International Vegetable Training Course (IVTC) as well as technologies that can help growers be more resilient in response to changing climates, such as raised bed cultivation, microirrigation, grafting, and vegetable lines that tolerate or resist abiotic and biotic stress.

Ram visits Thailand

(l to r): **Ramakrishnan Madhavan Nair**, **Robert Holmer** and **Narinder Dhillon**

While on travel to Vietnam and the Philippines, **Ramakrishnan "Ram" Madhavan Nair**, AVRDC Legume Breeder, stopped over for a few hours at AVRDC East and Southeast Asia in Thailand to meet with Regional Director **Robert Holmer,** Cucurbit Breeder **Narinder Dhillon**, and **Sirikul Wasee**, Director of Kasetsart University's Tropical Vegetable Center (TVRC).

Ram toured the research and field facilities in Kamphaeng Saen and discussed opportunities for legume breeding activities in the region. TVRC is promoting AVRDC's vegetable soybean lines, such as AGS 292, among farmers in Thailand. Vegetable soybeans have become a popular snack food among students and staff of Kasetsart University, and can be found in major supermarkets in Bangkok and in salad bars of some well-known food chains.

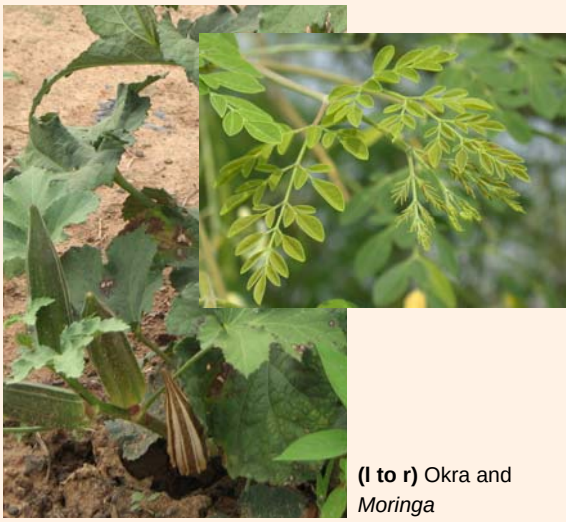
Partners in the news

Dil Thavarajah's search for ways to make lentils, chickpeas, and beans more nutritious was featured recently on Minnesota Public Radio, USA. A plant physiologist at North Dakota State University (NDSU), Dil and her husband **Thava**, a chemist, are working with the United States Department of Agriculture's Nutrition Lab and plant breeders and researchers in Australia, Bangladesh, and India to analyze and enhance pulse crops with high levels of iron, zinc, selenium, and vitamin A. In 2010 Dil set up the Pulse Crop Quality Laboratory at NDSU, the first of its kind in the country. Dil and Thava recently assisted AVRDC legume breeder **Ram Nair** with a sophisticated analysis of the micronutrient content of mungbean. The nutrients mungbean contains can be absorbed easily by the body, and the legume has the further advantage of being low in phytic acid, which can inhibit trace element and mineral absorption.

"Research goes into boosting nutritional value of pulse crops for developing countries," Minnesota Public Radio, 14 September 2011

http://minnesota.publicradio.org/

Seminars



(l to r) Okra and *Moringa*

Sanjeet Kumar, Vegetable Breeder, reported on okra breeding and other activities in West and Central Africa in a presentation to AVRDC staff on 15 September 2011. Nearly all of the okra in the region is grown by women in small-scale vegetable gardens under rain fed conditions or irrigation. Okra is a popular and important vegetable for the area, as the surplus harvest can be dried for later consumption—especially useful during the rainy season, when fewer vegetables are available. The Center's work with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Niger to promote improved heat-tolerant cultivars of okra, tomato, *Moringa* and other vegetables has encouraged more farmers to grow vegetables during the rainy season, and created a niche market for local seed producers.

Training workshop covers experimental design, statistics and multi-location variety trials

(**Left):** Participants and facilitators

(Top): Didit Ledesma (center) presenting certificates

(Bottom): Participants answering quiz questions and working together in group exercises

The USAID-funded project "Mobilizing vegetable genetic resources and technology to enhance household nutrition, income and livelihoods in Indonesia" conducted a training workshop on experimental design, statistics and multi-location variety trials from 25-29 July 2011 at Udayana University, Bali, Indonesia. The workshop aimed to equip national partners' staff with an understanding of the concepts necessary to conduct statistically sound research for development during the later stages of the project.

Didit Ledesma, AVRDC Biometrician, and **Miao-rong Yan**, Principal Research Assistant, AVRDC Genetic Resources and Seeds, presented lectures to 21 staff from the **Assessment Institute for Agricultural Technology of East Java and Bali**, the **Indonesian Vegetable Research Institute**, nongovernmental organization **FIELD**, and **Udayana University**. Site Manager **Joko Mariyono** and Project Manager **Kartini Luther** assisted by translating the materials and lectures into Bahasa Indonesia.

Didit's lively and informal presentation style kept participants engaged in the theoretical and practical aspects of statistics and experimental design. Question and answer sessions, hands-on individual practice, group discussions and presentations, short quizzes, and one-on-one consultations ensured everyone had the opportunity to absorb the material presented.

Each participant put their new knowledge to use by designing an experimental plan and analyzing statistical data. CROPSTAT, an open-source statistical software package developed by the International Rice Research Institute (IRRI), was used for analysis.

Miao-rong discussed practical implementation of multi-location variety trials, including choice of experimental design, plot sizes, number of plants per plot, sample sizes and data to be collected.

-- Kartini Luther

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. Future issues of Fresh *will follow the Center's history and progress in photos.*

Taiwan's Directorate General of Posts recognized AVRDC's effort to improve tomatoes for hot, humid growing conditions in a special stamp issue.

In 1973 and 1974, AVRDC researchers screened 3799 **tomato cultivars** for heat tolerance. Only 31 were found to be heat-tolerant—but those lines were sufficient for breeders to begin developing new tomato varieties that could be grown year-round in the tropics. By following a step-by-step incremental approach to research, AVRDC breeders were able to increase yields of tropical tomato from 5 tons per hectare to 45 tons.

To date, 172 tomato varieties based on the Center's lines have been released in 41 countries. AVRDC breeders continue to develop heat- and drought-tolerant, high yielding, disease-resistant tomatoes with improved fruit quality and nutritional content.