



Chili Peppers: No Place for Bitter Aftertaste

A small pepper 4 cm in length grown on the south coast of England has recently been acclaimed the world's hottest pepper, after tests showed that it is almost twice as hot as the previous record holder. The bite-size chili called Naga Jolika is big news to spice aficionados. However, the good news that has best chances to positively affect livelihoods of farmers in developing countries, is the growing attention that farmers in developing countries give to the production of chilies and sweet peppers.

Chilies and peppers are grown from tropical to temperate climates. In 2005 the global production amounted for 27.5 million tons. With 5.7 and 5.5 percent of the global share, the production in Southern Asia and sub-Saharan Africa does not seem exceedingly impressive in total numbers. This view changes when shifting the focus towards the regions: Looking at only developing countries as a reference, chilies and peppers are the most popular vegetable crops, being grown on an area of 0.73 million hectares in sub-Saharan Africa in 2005 (vs. 0.54 million hectares in 1995) and 1.21 million hectares in Southern Asia in the same year (vs. 1.10 million hectares in 1995).

Chilies are not only the oldest seasoning used in human diets, but also highly estimated for their positive health effects. In addition, growing high value crops such as chilies and peppers is labor intensive and provides employment to families who are engaged in all steps along the commodity chain.

In Africa peppers are becoming more attractive beyond domestic markets. According to *Businessday*, a Nigerian newspaper, producing peppers for the export market is seen as a way of diversifying the economic base of the country and providing income for both individual investors and Nigeria as a whole. Nigeria is one of the world's leading pepper producers and offers ideal conditions for pepper cultivation, due to its good weather and soils. Lately AVRDC's chili lines have been released in Ghana, and a hybrid variety utilizing AVRDC chili parents has recently been commercialized in West Africa.

Within the Center's pepper program, special concern is given to the adaption of pepper crops to warm, humid climates and resistance to important diseases. The biggest economic constraint to chili and sweet pepper production in the hot and humid tropics is anthracnose, causing extensive pre- and post-harvest losses. Disease management practices are often inadequate and resistant varieties are not available. To exchange information and discuss state-of-the-art practices to combat the disease, AVRDC is bringing together leading anthracnose-specialists from all over the world to the First International Symposium on Chili Anthracnose from 17-19 September in Seoul, Korea.

More information: <http://www.avrdc.org/anthracnose>

- Source: Communications

New Publications (Articles & Books) Received by the Library

Alan, A.R., Lim, W., Mutschler, M.A., Earle, E.D. (2007). Complementary strategies for ploidy manipulations in gynogenic onion (*Allium cepa* L.). *PLANT SCIENCE*. v.173:25-31.

AVRDC - The World Vegetable Center (2007). Managing metals in Vietnamese agriculture. Shanhua, Tainan: AVRDC - The World Vegetable Center. 8 pp.

Conforti, F., Statti, G.A., Menichini, F. (2007). Chemical and biological variability of hot pepper fruits (*Capsicum annum* var. *acuminatum* L.) in relation to maturity stage. *FOOD CHEMISTRY*. v.102(4):1096-1104.

Liu, J., Tian, S., Meng, X., Xu, Y. (2007). Effects of chitosan on control of postharvest diseases and physiological responses of tomato fruit. *POSTHARVEST BIOLOGY AND TECHNOLOGY*. v.44(3):300-306.

Liu, L.C., Xiang, X., Cao, J.S. (2007). Effects of silencing BcMF3 by RNAi on pollen development of flowering Chinese cabbage. *ACTA HORTICULTURAE SINICA*. v.34(1):125-130.

Mahmood, T., Rahman, M.H., Stringam, G.R., Yeh, F., Good, A.G. (2007). Quantitative trait loci for early maturity and their potential in breeding for earliness in *Brassica juncea*. *EUPHYTICA*. v.154(1/2):101-111.

Prabhavathi, V., Rajam, M.V. (2007). Mannitol-accumulating transgenic eggplants exhibit enhanced resistance to fungal wilts. *PLANT SCIENCE*. v.173:50-54.

Tripathi, P., Leggio, L.L., Mansfeld, J., Ulbrich-Hofmann, R., Kayastha, A.M. (2007). Alpha-amylase from mung beans (*Vigna radiata*) - correlation of biochemical properties and tertiary structure by homology modelling. *PHYTOCHEMISTRY*. v.68(12):1623-1631.

Wu, S.J., Ng, L.T. (2007). Antioxidant and free radical scavenging activities of wild bitter melon (*Momordica charantia* Linn. var. *abbreviata* Ser.) in Taiwan. *LWT - FOOD SCIENCE AND TECHNOLOGY*.

Le Thuy, V., Franke, A.A., Custer, L.J., Murphy, S.P. (2006). *Momordica cochinchinensis* spreng. (gac) fruit carotenoids reevaluated. *JOURNAL OF FOOD COMPOSITION AND ANALYSIS*. v.19(6-7):664-668.

New Popular Magazines Now Available in the Library

The Economist: Apple and the art of innovation – 9th-15th June 2007

National Geographic (Chinese) – June 2007

Time: Hong Kong's Future: sunshine, with clouds – 18 June 2007



Recommended Web Link of the Week:

Vegetable Farming in “The Big Apple” — A Fresh Interpretation of Noah's Arch

Can fruits and vegetables be grown on board of a boat? A unique project transforms barges into sources of food production. The so-called Science Barge is an attempt to show that urban agriculture can be eco-friendly and even be possible in a megacity like New York. Initiated by New York Sun Works, an environmental non-profit organization, the barge is a sustainable urban farm

powered by solar, wind, and biofuels, and irrigated by rainwater and purified river water. The fruits and vegetables are grown on board with a technology labeled "recirculating greenhouse hydroponics", that does not use soil. Read more: <http://www.nysunworks.org/>

- Source: Fang-chin Chen/Communications

News from AVRDC-Asian Regional Center

Workshop Participation

Dr. Peter Ooi, Regional Director, AVRDC-ARC and the new National Expert, Dr. Le Thi Thu Huong participated in a Seminar and Inception Workshop to discuss planning for the new IFAD grant No. 937 – AVRDC on “Integrated Safe and Off-Season Vegetable Production with Market through Information, Education and Training in Ha Tinh and Tra Vinh Provinces, Viet Nam” - SOVP. The Seminar and Workshop was held in the office of the Institute of Agricultural Sciences, Ho Chi Minh City, from 5 to 6 June 2007. It was attended by 12 representatives of six partner agencies from the north and south of Vietnam. The output included an adoption of activities for the four components of the project which facilitated the development of corresponding funding for the partner agencies.

The Regional Director and three staff members of the ARC Training Center in Kamphaeng Saen participated in a meeting with the Research and Development Institute of Kasetsart University, Kamphaeng Saen (RDI-KPS) on 8 June, 2007 to discuss the possibility of jointly

developing three project proposals, viz. mungbean breeding, biochemical functionalities of native vegetables and tropical organic farming. The meeting was held in the library of the ARC Training Center.

Dr. Peter Ooi is attending to the seminar on “Policy Support for Cross Border Contract Farming” in Bangkok from 13-15 June 2007. The Seminar is jointly sponsored by the Ministry of Agriculture and Cooperatives of the Royal Thai Government and the Asian Development Bank with the cooperation of the International Fund for Agricultural Development. The paper presented by ARC is on “Empowering farmers with advanced vegetable production to encourage safe and off-season vegetables in GMS countries”.

Outcomes of the Monthly Staff Meeting

Highlights of the meeting included:

Briefing on the inception meeting of the IFAD-funded SOVP project last 5-6 June 2007; preparations for the 26th Regional Training Course which will be co-managed by Ms. Somchit and Mr. Worawit; inventory of books in the ARC Bangkok and Kamphagensaen

libraries; updates on the proposals to be submitted to BIOTEC which will be co-implemented with KPS RDI.

New Staff



AVRDC-ARC warmly welcomes Dr. Le Thi Thu Huong as the National Expert of the IFAD/AVRDC-ARC SOVP project effective 4 June 2007. Dr. Huong has a Ph.D. degree in Plant Pathology from University of Bonn, Germany. Prior to working at ARC, Dr. Huong worked as a

National Expert in the Vegetable IPM Program of FAO Vietnam. Dr. Huong, with the guidance of ARC's Regional Director, will coordinate all the activities of the SOVP project in the provinces of Ha Tinh and Tra Vinh. Dr. Huong will be based in Hanoi and can be contacted through her email address: huonglevn@hotmail.com

- Source: Dr. Peter Ooi/Regional Director/AVRDC-RC

Training

Ms. Somchit Preongwitayakun, Training and Research Assistant, based in the Training Center of ARC in Kamphaeng Saen, completed a two-month course on Training of Trainers organized by the Department of Agricultural Extension in Suphan Buri. Her new skills

will enhance her role as the assistant coordinator of the Regional Training Course.

Visitors

Dr. Brent Rowell of IDE, Myanmar visited the ARC office on 8 June 2007 to follow up on the possibility of collaboration between IDE and AVRDC-The World Vegetable Center.

Mr. Vincent Lu C., AVRDC-The World Vegetable Center Internal Auditor visited ARC from 6-14 June 2007 to assist and advise ARC in managing its finances.

Birthday Bash



The A(RC)-team celebrated Dr. Peter Ooi's 57th birthday on 11 June 2007. In his birthday message, Dr. Ooi thanked the staff for their team work and look for-

ward to enhancing the role of ARC in vegetable development in the region.

- Source: Dr. Peter Ooi/Regional Director/AVRDC-ARC

Visitors at Headquarters

A group of 11 vegetable scientists from the Beijing area will visit the Center on 18 June. Their tour has been organized by the Beijing Vegetable Society. The delegation is eager to

learn more about AVRDC's research activities and vegetable production technologies.

- Source: Communications

New E-mail Address

Ms. Rosario A. Salas, Graduate Student, Crop and Ecosystem Management Unit, rosario.salas@netra.avrdc.org.tw.

- Source: Shirley Chen/Communications

News from Africa

Training

AVRDC-RCA conducted a two day training course from 14 to 15 June on Vegetable Production, Processing and Preservation for farmers from Mshikamano Institute, Arumeru District, Arusha Region.

Visitors

Mr. Bhujanga Rao, Research Manager, East African Seed Company, Kenya and Mr. Surendra Bakshi, Marketing Manager, East African Seed Company, Tanzania visited AVRDC-RCA on 31 May 2007, to learn more about RCA program and vegetable varieties.

Dr. Jackie Hughes visited RCA on 1 and 5 June and 9-13 June to work with Dr. Detlef Virchow on the vBSS Africa Project and the recruitment of Liaison Officers.

Ms. Tara Simpson, an Msc Graduate Student from Cornell University, USA has arrived at RCA to conduct her research from 9 June to 25 July. She will carry out an impact evaluation of the dynamics and performance of indigenous vegetable farmer groups in Tanzania

associated with IV projects of AVRDC and Farm Concern International, Kenya. Tara has just completed the same evaluation for the Kenya component of the IV projects.

Mr. John Monyo from Chema Enterprises, Arusha and Mr. Lawrence Cochcroft from the Gatsby Foundation, London, visited RCA on 12 June to discuss the Kilimo Trust funded project on “Understanding how to achieve impact-at-scale through nutrition-focused marketing of African Indigenous Vegetables (AIVs) and Orange-Fleshed Sweet Potatoes”.

Dr. Warwick Easdown, visited RCA from 10 to 15 June to discuss training with RCA staff, to meet IV producers, seed company representatives and scientists to develop promotional stories.

Mr. Vincent Lu, Internal Auditor of AVRDC, will visit RCA from 15 to 20 June to perform the first overseas audit in 2007, including operational review, financial reporting and management of cash and fixed assets.

- Source: Dr. Shilpi Saxena/AVRDC-RCA



Training Course on Vegetable Disease Screening Technique

After two weeks of intensive lectures and practices, the training course on Vegetable Disease Screening Technique ended on 15 June. The coordinator likes to thank all resource persons and supporting staff, who

made this course possible. Certainly, the enthusiasm of the 10 participants contributes to the success and is a good motivation!

- Source: Dr. Jaw-Fen Wang/
Disease Screening Training Course Coordinator

Travel

Dr. Srinivasan Ramasamy, 14-18 June, to Syria, to observe the occurrence and review the progress of the DBM parasitoid collections, and other relevant project activities (Project: DBM Biocontrol/ICIPE) at Aleppo University; 19-25 June, to Greenwich, UK, to attend the meetings of the CIMBAA Supervisory Board and International Advisory Panel.

Dr. Greg Luther, 18-28 June, to Uganda and Tanzania, to conduct IPM R&D activities for the IPM CRSP East Africa Regional Project.

Dr. Thomas Lumpkin, 20-22 June, to Greenwich, UK, to attend the meetings of the CIMBAA Supervisory Board and International Advisory Panel; 23-27 June, to Brussels, Belgium, to attend the GlobalHort Awareness Raising Conference for Development.

Dr. Zhanyong Sun, 20 June-15 July, on annual leave. During this period, Dr. Sun will visit Drs. Jack Staub and Phil Simon to discuss with them future collaboration on US pickling type cucumber and high carotene cucumber breeding at the University of Wisconsin-Madison on 10

July. On 11 July he will work at the Phytosanitary Office, Madison, Wisconsin to prepare cucurbit seeds and obtain the phytosanitary certificate to ship them back to the Center.

Dr. Drissa Silué, 23-30 June, on annual leave.

- Source: Yvonne Ting/ASU

Dr. Peter Ooi, 19-29 June, to Islamic, Iran, on invitation by the Asian Productivity Organization to support an APO Technical Expert Service for Integrated Participatory Crop Production and Protection.

- Source: Dr. Peter Ooi/Regional Director/AVRDC-ARC

Dr. Germain Pichop, 17-24 June, to Bamako, Mali, to facilitate a workshop with students selected to conduct a vegetable consumption pattern study in West Africa, which is part of the USAID-WARP project.

- Source: Dr. Shilpi Saxena/AVRDC-RCA

What's New on the AVRDC Websites?

Internet: <http://www.avrdc.org>

∇ **Jobs:** Consultants for Baseline Studies, Molecular Marker Specialist, Plant Pathologist, Seed Health Specialist, Seed Marketing Specialist, Tomato Breeder, Vegetable Breeders, and Research Assistants (Pepper and Tomato Breeding)

∇ **Publications:** Raising Successful Crop of Summer Mungbean, Technology Package for Mungbean Cultivation in Punjab (India), Mungbean Punjabi Recipes

Intranet: <http://www.avrdc.org/intranet/home.html>

∇ Telephone and E-mail directories

Anthraxnose Website: <http://www.avrdc.org/anthracnose/index.html>

∇ Sponsor: Seminis, Inc.

- Source: Communications

Dragon Boat Race

A team of rowers from AVRDC will compete in the annual Dragon Boat Race 2007 on Tuesday, 19 June. For those who would like to enjoy the event and give support to AVRDC team, there will be 15 seats available in the bus. The bus will leave AVRDC at 14:00 hours. The preliminary race starts at 17:15 hours and the final race will also be conducted the same day.

亞蔬龍舟隊將參加台南市政府舉辦的年度龍舟賽盛會，初賽訂於6月19日（星期二）端午節當天下午5點15分在台南運河展開，亞蔬龍舟隊若在初賽晉級，複賽則於當天稍晚進行。本中心將派車載選手及啦啦隊前往，想參與盛會的同仁可在餐廳前搭車，尚有15個空位，開車時間是下午2點整。

- Source: Kartini (Iin) Luther/R&S Committee

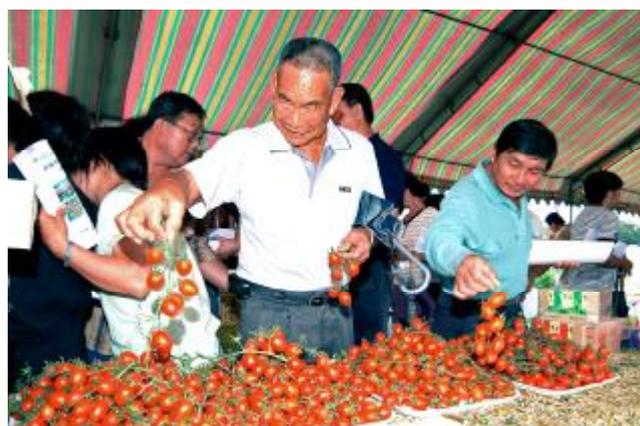


Successfully Growing Safer Tomatoes

In spite of heavy rainfall this Tuesday, 12 June, almost 100 local tomato growers attended a successful field day on safer tomato production in the plastic house at field No. 17 at AVRDC headquarters. The participants were given presentations on healthy seedling production, optimum fertilizer applications using organic and chemical inputs and IPM for insects and diseases, followed by discussions and a field visit. For the past two years, AVRDC has demonstrated safer tomato production in open-field production systems. This was the first time that protective cultivation technology has been demonstrated to the broad public. Tomatoes are the

world's most popular vegetable, and safer production will have far-reaching benefits to both farmers and consumers.

- Source: Dr. R. Srinivasan/Entomology Unit



Position Announcement — Officer, Administrative Services Unit

行政室徵「採購科員」乙名

AVRDC – The World Vegetable Center is seeking a Purchasing Officer to handle local and foreign purchases of supplies and office equipment, and provide other miscellaneous general administrative assistance to the Administrative Services Unit. **Key Responsibilities:** assist the staff in identifying product specifications; identify and get quotations from different sources of the required supplies and equipment; negotiate actual purchase with vendors as required; select vendors from quotations received based on price and quality of sample materials and ability of vendor to supply the required quantities; interact/coordinate with internal units/offices and external suppliers; pick up operating supplies, equipment, and laboratory materials from local vendors; resolve quality or delivery problems; handle outgoing mails through couriers such as DHL/UPS/TNT; and perform other duties as may be assigned. **Qualification:** BA or BS degree in business, science or agriculture, below age 35; at least two (2) years experience in industrial or office purchasing; fluent in written and spoken English; knowledge of MS Office computer software; excellent interpersonal skills; and at least two years experience in driving (car) and with valid car driver's license. **Application:** Submit a letter of application, Curriculum Vitae, with names, and contact addresses (phone number and e-mail) of three referees. Send to: Human Resources, PO Box 42, Shanhua, Tainan, Taiwan 74199 on or before 10 July 2007.

E-mail: jobapply@netra.avrdc.org.tw

Full details can be found on the Center's website:
<http://www.avrdc.org>.

主要負責：國、內外採購業務。協助員工確認產品規格；確認貨物及個別詢價；依據報價、提供的樣品及所需數量選擇廠商；協調與聯絡申請單位及廠商；負責外勤業務；解決產品品質及交貨問題；接洽快遞公司交寄文件；完成單位主管指派的其他業務。

應徵資格：大學商科、農科、理工科畢業；35歲以下；兩年以上採購經驗；英文說寫流利，熟悉電腦應用軟體；擅長人際關係；兩年以上駕駛汽車經驗，有駕照者。**截止收件日期：**2007年7月10日。應徵方式：請將中、英文自傳、履歷表以及三位介紹人姓名、聯絡地址(包括電話、電子郵件信箱)寄至：亞蔬—世界蔬菜中心，台南縣善化鎮郵政信箱42號，人事室或電子郵件信箱：jobapply@netra.avrdc.org.tw 本中心網址：<http://www.avrdc.org>

- Source: Felisa Wang/HR

Mosquito Control Being Postponed, Headquarters, Saturday, 23 June

Because of the rain the mosquito insecticide spraying on the Center's campus will be rescheduled for next Saturday, 23 June. The contractor will begin spraying at 0900 hours starting from the residential area and completing the whole campus around 1600 hours.

因梅雨鋒面連連，中心園區的殺蟲劑噴灑作業將延至6月23日(星期六)上午9點至下午4點，請大家注意安全！

- Source: Janice Chou/TSO