

Adding value: Increasing appetite for vegetables lets opportunities grow in India

Rising incomes and greater health awareness, especially among urban Indians, have boosted demand for fruits and vegetables, keeping prices firm and prompting farmers to increase acreage. The demand for vegetables is growing faster than that of cereals and pulses, the traditional Indian staple.

The world's second largest producer of fruits and vegetables, India produced 206 million tonnes of horticultural crops in 2007-08, up 41 percent compared to 146.5 million tonnes in 2001-02. In the same period, the acreage under horticultural crops rose by 17 percent to 20.2 million hectares. In the last few years the horticulture sector has been growing at around 6 percent. In the coming years, observers expect this rate to stay; horticultural production of more than 270 million tonnes a year will be no illusion.

This may sound like good news, as a slight shift from cereal to vegetable production could have a major economic impact and improve consumer nutrition nationwide. However, in India less than 2 percent of the fruits and vegetables produced are processed compared to 65 percent in the U.S. and 70 percent in Brazil, another agricultural mega-player that is



Chic and healthy: India's middle and upper classes are becoming conscious consumers and have triggered the latest boom in vegetable production and consumption in the country.

The trend is restricted to urban areas, but vegetable research and development strives to help rural communities catch up.

performing successfully in national and foreign markets. India exports little because handling, packaging and storage facilities fall short of international standards.

Furthermore, the positive trend of boosting vegetable consumption is typically restricted to urban areas and the emerging middle class. A look at the country as a whole shows that the per capita consumption of vegetables is only about 86 g a day, compared to FAO's recommendation of 200 g a day.

In a recently initiated project funded by the Sir Ratan Tata Foundation, AVRDC – The World Vegetable Center is developing appropriate solutions to improve vegetable production and consumption for sustainable rural

livelihoods in the Indian states of Jharkhand and Punjab. The goal of the project, which has a budget of a little more than US\$ 1 million, is to increase the adoption of vegetables as cash crops in targeted areas of the two states, and to identify opportunities to make vegetable marketing more efficient. The project also aims to increase resource-poor farmers' production and consumption of protein, vitamin A and iron-rich vegetables as well as nutrient-rich indigenous vegetables and legumes from home gardens.



The project is coordinated by the Regional Center for Southern Asia in Hyderabad, but will receive technical and research support from headquarters.

Source: "Urban Indian appetite boosts fruit, vegetable acreage", Reuters, 11 June 2008

The LIBRARY

New publications

...from the Crucifers SDI Bulletin

Berbegal, M., Garcia-Jimenez, J., Armengol, J. (2008). Effect of cauliflower residue amendments and soil solarization on *Verticillium wilt* control in artichoke. *PLANT DISEASE*. v.92(4):595-600.

Chang, P.T., van Iersel, M.W., Randle, W.M., Sams, C.E. (2008). Nutrient solution concentrations of Na₂SeO₄ affect the accumulation of sulfate and selenate in *Brassica oleracea* L. *HORTSCIENCE*. v.43 (3):913-918.

Donald, E.C., Jaudzems, G., Porter, I.J. (2008). Pathology of cortical invasion by *Plasmodiophora brassicae* in clubroot resistant and susceptible *Brassica oleracea* hosts. *PLANT PATHOLOGY*. v.57 (2):201-209.

Hayashida, N., Takabatake, Y., Nakazawa, N., Aruga, D., Nakanishi, H., Taguchi, G., Sakamoto, K., Matsumoto, E. (2008). Construction of a practical

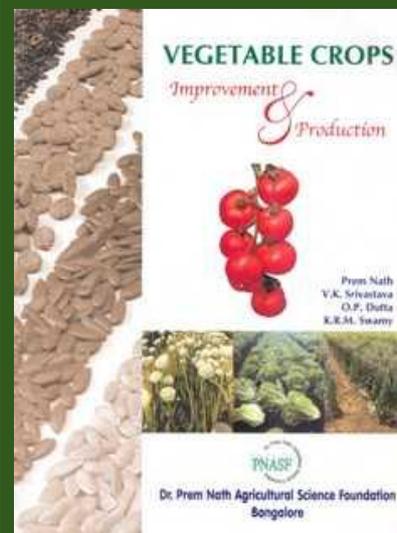
SCAR marker linked to clubroot resistance in Chinese cabbage, with intensive analysis of HC352b genes. *JAPANESE SOCIETY FOR HORTICULTURAL SCIENCE, JOURNAL*. v.77(2):150-154.

Li, C.X., Sivasithamparam, K., Walton, G., Fels, P., Barbetti, M.J. (2008). Both incidence and severity of white rust disease reflect host resistance in *Brassica juncea* germplasm from Australia, China and India. *FIELD CROPS RESEARCH*. v.106(1):1-8.

Liang, Y., Srivastava, S., Rahman, M.H. (2008). Proteome changes in leaves of *Brassica napus* L. as a result of *Sclerotinia sclerotiorum* challenge. *JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY*. v.56(6):1963-1976.

Liu, H.C., Chen, X.M., Chen, R.Y., Song, S.W., Sun, G.W. (2008). Effects of magnesium deficiency on growth and photosynthesis of flowering Chinese cabbage. *ACTA HORTICULTURAE*. no.767:169-174.

Ready to read



Vegetable Crops: Improvement and Production by P. Nath, V.K. Srivastava, O.P. Dutta, and K.R.M. Swamy, is the latest addition to the Library's collection. It's published by the Agricultural Science Foundation, Bangalore, India.

— Fang-chin Chen/Communications

Web Link of the Week

DIR – The Database of IPM Resources

DIR is a compendium of customized Integrated Pest Management information resources. With DIR, you can quickly find thousands of IPM websites. DIR presents these web resources in a logical, structured, and searchable way. It covers crops, pests, control tactics, regions,

organizations, and related topics in a user-friendly format.

Please visit <http://ipmnet.org/cicp/Index.htm>

It's scantastic!

Did you know all documents published by the Center through 1990 are now available online at the Library website? Mr. Jin-tien Hu has been hard at work scanning and uploading reports, book chapters, journal articles, proceedings, and

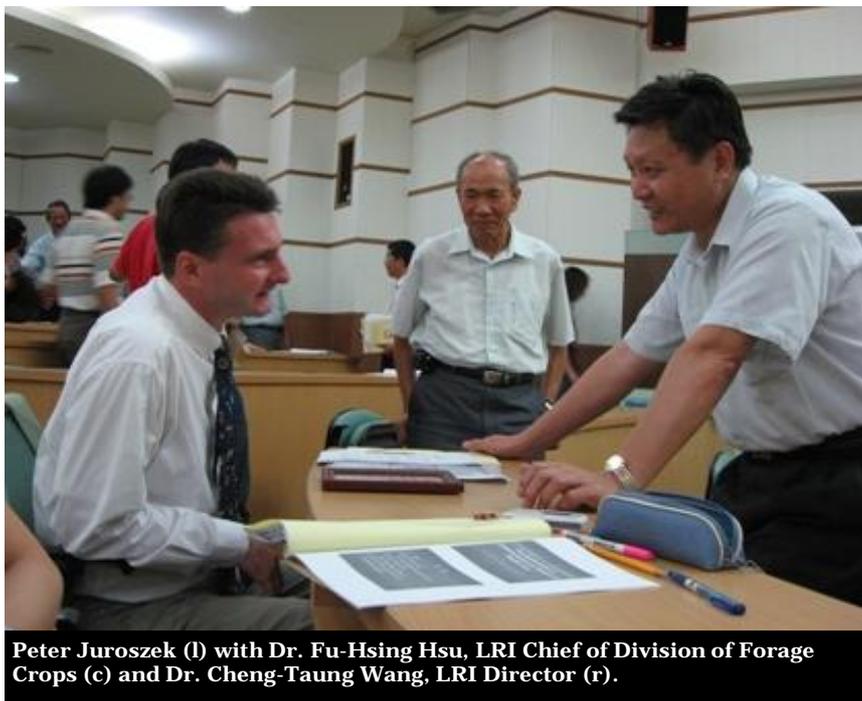
other publications the Center has printed over the years. About 850 documents have been scanned to date. The Library aims to have the Center's entire publication collection online by mid-2009. Visit this growing electronic storehouse of AVRDC's history, knowledge, and progress at:

<http://libnets.avrdc.org.tw>

— Fang-chin Chen/Communications

CORNUCOPIA

Organic forages for Taiwan?



Peter Juroszek (l) with Dr. Fu-Hsing Hsu, LRI Chief of Division of Forage Crops (c) and Dr. Cheng-Taung Wang, LRI Director (r).

Peter Juroszek, head of the Center's Organic Farming Program, gave a talk on 10 June about the

program's creation and growth to some good neighbors with a common interest in agriculture. At

the Livestock Research Institute, Taiwan located in nearby Sinhua, he explained the basic principles of organic farming to institute staff who would like to explore growing forage crops organically. The institute provided the Napier grass that forms part of the boundary of the Center's organic fields, so it was a chance for Peter and the organic team – Ida Tsai, Ming-jen Yang, Judy Shen, and Tsai-tu Chen – to return the favor. Throughout his talk, Peter emphasized the importance of using outstanding, disease-resistant, high-yielding varieties for successful harvests, whether organic or conventional.

– *Communications*

FOCUS: AFRICA

Shilpi Saxena trained enumerators for the project "Organic vegetables: domestic and regional marketing constraints and income generation opportunities for small-scale farmers in sub-Saharan Africa" in Durban, South Africa from 2-5 June.

Eight undergraduate students from the departments of Agricultural Economics and Crop Science at Sokoine University of Agriculture, Tanzania arrived at RCA on 9 June for five weeks of field training. Peter Alloyce, Mshana Asante, Mchorwa Moranga Jared, William Godbless, Raphael Macha, Mika Frank, Calisto Silvery and Leoni Innocent will develop their skills in vegetable production and socioeconomics.

Thomas Dixon of Lindora Ltd.,

Arusha and Hans Nijhoff, economist with Wageningen International Programme for Capacity Development and Institutional Change, The Netherlands, visited AVRDC-RCA on 11 June to learn more about vegetable value chains in East Africa.



Marius Andriamainty Fils Jean joined vBSS Madagascar as a seed multiplication specialist on 2 June. Marius holds an MSc in Agronomy from Kuban Institute of

Agronomy, Krasnodar, Russia. He previously worked as a researcher at FOFIFA (Centre National de Recherche Appliquée au Développement Rural) in eastern Madagascar specializing in phylogenetic resource management and seed production operations; he also has trained public and private sector personnel in the production of bean, peanut, maize and cassava seed. His email:

marius.andriamainty@worldveg.org

– *Shilpi Saxena, AVRDC-RCA*

SKETCH



Name: Edwin L. Javier

Home: I am from Sta. Cruz, a town in Laguna, Philippines. It's 18 km away from Los Baños, where the International Rice Research Institute (IRRI) is located.

Position:

International Variety Development Coordinator

Why you do what you do:

My interest in plant breeding and genetics started when I took a course in basic genetics in my undergraduate degree in agriculture at the University of the Philippines at Los Baños (UPLB). After completing my MSc at UPLB and PhD at North Carolina State

University in the same fields, my research career has progressed from developing and testing improved rice varieties for various national programs to worldwide sharing, testing and utilization of the elite rice germplasm through IRRI's International Network for Genetic Evaluation of Rice (INGER).

Why you do it at AVRDC:

I was very excited to see the position announcement for International Variety Development Coordinator in December 2007. I did not expect that I would find a job that would make use of my seven-year experience as INGER Coordinator. Improved vegetable varieties and elite breeding lines of AVRDC's breeding programs constitute important intellectual property of the Center. Global sharing and use of this germplasm along with germplasm from NARES and the private sector requires intellectual property management tools. This makes my present post very challenging.

Research:

The International Vegetable Variety Development Network is envisioned to be the major vehicle for the global exchange and evaluation of elite vegetable germplasm. Information obtained will be useful in understanding genotype by environment interaction, researchers' choice and farmers' preferences.

What's next:

I cannot predict how IVVDN will evolve but I am sure I would like to be part of its evolution.

Favorite day-to-day Taiwan experience:

I have lived in the Philippines, USA, Sri Lanka and Cambodia and would need at least 30 minutes by car/bus to reach my workplace. In Taiwan, I just need a five-minute walk from my apartment to the office.



Daylilies and sunflowers growing in AVRDC's organic fields add a bright contrast to Taiwan's green landscape. Most often planted in Taiwan for visual impact, sunflowers also attract bees and other pollinators, improve soil fertility, reduce weed growth and help control erosion. Daylilies also combine beauty and utility: the buds are edible, and do appear from time to time on the menu in the Center's cafeteria.

— photo by Peter Juroszek