

Book of Abstracts

Innovation Asia-Pacific Symposium

4 - 7 May 2009, Kathmandu, Nepal



project leader's roles on policy making bodies, other avenues being explored include the Research Advisory Committee of the Central Rice Research Institute, Cuttack, and the Review Team of the Directorate of Rice Research, Hyderabad, and the National Academy of Agricultural Sciences, which is among the most powerful scientific organisations of India.

Horizontal approaches being tried include establishing the "*District Agriculture Development Forum*" which facilitates sharing of learning experiences amongst stakeholders and dissemination of knowledge. Similarly, a *Scientist-Extension workers-Farmers groups* alliance ensures a flow of information and supports participatory testing and selection of rice varieties and management options. This has led to the identification of a number of flood tolerant (e.g. *Swarna Sub-1*) and salt tolerant varieties (e.g. *Kalanamak-3119*), for which a farmers' participatory "*Seed production on farm*" programme has also been launched.

During promotion of direct seeded rice technologies in eastern Uttar Pradesh., one of the bottlenecks observed was the poor availability of drum seeders. Seeders had to be procured from considerable distances like Coimbatore, Tamil-Nadu and Bhopal, M.P. Unless machines could be built locally it was hard to envisage that the technology was viable. Hence a "*Farmers-Farm Machineries-Manufacturers-Bankers-Scientists Alliance*" was formed which has enabled the development and manufacture of a range of farm implements (drum seeder, zero-till seed drill, reaper-binder and cono-weeders) by local manufacturers under the guidance of the College of Engineering & Technology and the financial support of the Bank of Baroda. This alliance is mutually beneficial and feedback provides input to researchers for further improvement.

Keywords: network, NGO, India, poverty, smallholders, farmers

Innovations in management of fruit flies in mango and citrus orchards in Pakistan

Rehman A and Mahmood R

Quarantine sensitive countries like Japan, Australia and Korea banned the import of mango from Pakistan because of oriental fruit fly. Countries like China, Iran, Russia, Philippines, Sri Lanka and Indonesia require certification that citrus imported from Pakistan is from fruit fly free zones. At a domestic level the issue of fruit flies has become complex over time because of the sole reliance on pesticides for their control. Repeated pesticides sprays in orchards and on farms have raised the issue of residues in fruits. Such high pesticide use prevents farmers complying with WTO standards and raises health concerns, even though this has not been documented in domestic markets. To address these issues a pest management strategy was needed which not only complied with international production standards set under WTO regulations but that also improved fruit production on farms.

A pest management package involving combined application of known control measures including male annihilation, bait application, crop hygiene and conservation of parasitoids was tested against fruit fly in mangos. The package was found to be most effective when applied on larger areas than localized patches, with infestations reduced to 0.2% in an isolated mango patch of 180 ha at Basti Lar, Multan (where the risk of fruit fly incursion from adjoining areas was small) compared to 3% in a 40 ha patch found in the main mango belt of more than 3000 ha at Kabir Wala Multan. This compared to 20% infestation of mangoes in control areas where no plant protection measures were applied.

At the same time monitoring of fruit flies via catches of fruit flies in traps baited with dorsal lure, trimmed lure, cue lure and oil of citronella provided evidence of presence and habits of

different fruit fly species. Monitoring in Sargodha and Bhalwal (the main citrus growing areas) showed that fruit flies like oriental fruit fly (*Bactrocera dorsalis*) and peach fruit fly (*B. zonata*) in citrus (Kinnow) underwent hibernation/dormancy in winter from December to February at these localities. This is the period when fruit matures and remains free from fruit fly attack and this evidence removed fears of contamination of fruit flies for fruit importing countries. Attraction of different species of fruit flies to med lure and rearing of fruit flies from different host fruits provided evidence leading to certification of the absence of Mediterranean fruit fly *Ceratitis capitata* from Pakistan.

Farmer Field Schools were established by the Government Department of Agriculture extension in citrus and mango growing areas, following training by scientists. Together with demonstration plots this provided a mechanism for farmers to observe and test the management practices. More recently other stakeholders are organizing to supply required inputs, setting up and managing sterile fly production facilities etc. for farmers so they can be able to use and take advantage of these new practices. Scientists have assisted farmers to become registered by GLOBAL GAP through facilitating linkages with appropriate departments and linkages. The combination of activities is resulting in the use of the management package becoming widespread in the area.

Both use of the management practices that were compliant with WTO standards and presentation of evidence by CABI about presence and habits of flies were crucial in persuading the exporters to purchase more fruit. As a result Iran, Russia and China have allowed the import of Kinnow (a citrus variety) from Pakistan harvested from Sargodha and Bhalwal during the period of fruit fly dormancy. Furthermore, not only has fruit production and quality improved on farms, the fruit export of mango from Pakistan was doubled to more than 100,000 metric tons compared to the 1990's. Similarly export of Kinnow has increased to about 200,000 metric tons.

Climate and disease - uniting to improve health

Patti Kristjanson, Susan MacMillan, Clare Kemp

This 8-minute film highlights a partnership-building process called a 'Challenge Dialogue' that brought together a group of two hundred experts from East Africa's climate, human and animal health communities in 8 months of online discussions, with 60 of these scientists and practitioners getting together at the end of 2008 for a workshop. This innovative process of bringing diverse people together quickly and efficiently, the issues addressed, the proposed 'One Health' approach for addressing them, and the lessons learned are all extremely timely and relevant for the Asia-Pacific region.

Global Plant Clinic

Eric Boa

The Global Plant Clinic (GPC) is a CABI-led initiative about provision of Plant Health Services in which mobile "plant clinics" are networked with input suppliers, expert advice, diagnostic services and national plant protection organisations to improve early detection of new and emerging pests and diseases and aid a quick response to reduce their impact. The initiative is operational in Asia, Africa and Latin America with on-going activities in Bangladesh and India and by the time of the meeting there may be activities in Nepal