

IPM CRSP Trip Reports

Country Visited: India

Dates of Travel: 18-24 July 2011

Travelers Names and Affiliations: Tashpulatova Barno, Research fellow, IPM CRSP project and Aitmatov Murat, Educator, IPM CRSP project

Purpose of Trip: Participate in the IPM CRSP Sponsored International Workshop on 'Production of biocontrol agents' (*Trichoderma* & *Pseudomonas*). Department of Plant Pathology Centre for Plant Protection Studies Tamil Nadu Agricultural University, Coimbatore-641003, India

Sites Visited: Tamil Nadu: Tamil Nadu Agric. University, Coimbatore; Karnataka: Bio-Control Research Laboratory at Bangalore.

Description of Activities/Observations:

The main activities were the following:

- Production of biocontrol agents (*Trichoderma* & *Pseudomonas*)
- Application of biocontrol agents
- Role of biocontrol agents in crop protection

July 18th 2011- Registration, Pre-evaluation and Inaugural Session

Lecture on: Introduction and prospects of biological control, Presentations by workshop participants.

July 19th 2011- Lectures on: Selection of biocontrol agents, Formulations and Delivery system of biocontrol agents; Bioefficacy of biocontrol agents

Practice - Isolation of *Trichoderma* and *Pseudomonas* from Rhizosphere and Phyllosphere; *In vitro* Screening of biocontrol agents.

July 20th 2011- Lectures on: Mass production of *Pseudomonas fluorescens*; Mass production of *Trichoderma viride*; Enumeration of population of biocontrol agents in the formulations (Practical).

Practice – Demonstration of Fermenter and its capacity on production of *Trichoderma viridae*

July 21th 2011 –Field visits to biocontrol plots; Lectures on Induced Systemic Resistance (ISR)/ Systemic Acquired Resistance (SAR) and Storage and shelf life of biocontrol agents.

Practice – Demonstration of Fermenter and its capacity on production of *Pseudomonas fluorescens*

July 22th 2011 Lectures on: Quality control of biocontrol agents; Registration procedures for biocontrol agents in India.

Presentations and discussions: Workshop participants from host countries and plenary session.

Departure to Bengaluru

July 23th 2011 Visit to Bio-control Research Laboratories (BCRL) 36/2, Sriramanahalli, Nr. Ra-jankunte, Dodballapur Road, Arakere Post Bengaluru-561203, Karnataka, India, Email: bcr1@pcil.in Website: www.pcil.in
Demonstration products manufacturing by BCRL for biological control of pests and diseases

Departure to New Delhi

July 24th 2011 Departure to Tashkent, Uzbekistan

Training Activities Conducted

Workshop	Date	Audience	Number of Participants		Training Provider (US university, host country institution, etc.)	Training Objective
			Men	Women		
Workshop	July 18, 2011	17	11	6	Department of Plant Pathology Centre for Plant Protection Studies Tamil Nadu Agricultural University, Coimbatore, India Virginia Tech University, USA;	1)Introduction and prospects of biological control; 2)Isolation of <i>Trichoderma</i> and <i>Pseudomonas</i> from Rhizosphere and Phyllosphere
Workshop	July 19 th 2011	17	11	6	The same	1)Selection of biocontrol agents; 2)Mode of action of bioagents; 3)Formulations & Delivery system of biocontrol agents; 4) <i>In vitro</i> Screening of biocontrol agents, 5)Bioefficacy of biocontrol agents
Workshop	July 20 th 2011	17	11	6	The same	1) Mass production of <i>Pseudomonas fluorescens</i> 2) Mass production of <i>Trichoderma viride</i> 3)Enumeration of population of biocontrol agents in the formulations (Practical)
Workshop	July 21 th 2011	22	15	7	//==//	1)Field visits to biocontrol plots; 2)Induced Systemic Resistance(ISR)/Systemic Acquired Resistance (SAR) 3) Storage and shelf life of biocontrol agents;

Workshop	July 22 nd 2011	17	11	6	The same	1)Quality control of biocontrol agents; 2)Registration procedures for biocontrol agents in India; 3) Presentations and discussions - Workshop participants from host countries, including TNAU and TERI IPM CRSP Scientists
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Suggestions, Recommendations, and/or Follow-up Items:

- Selection of biocontrol agents might be done in the country of participants.
- Formulations and Delivery system of bio-control agents can be provided according to specificity and infrastructure of country of participants.
- Biocontrol agents should be applied according to texture and structure of soil.

List of Contacts Made:

No	Name	Position	Institute/ organization	Address	Telephone and e-mail
Tamil Nadu Agricultural University, Coimbatore, India					
1	Dr. E. Jonathan	Director	Centre for Plant Protection Studies	P-13(Old) TNAU Staff Quarters	Tel.: E-mail. directorcpps@tna.ac.in
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3	Dr. S. Mohankumar	Professor	Dept. of Plant Mol. Biology &Biotechnology	TNAU, Coimbatore-641003 India	Tel: 0914226611237 smktnau@gmail.com

Virginia Tech, Blacksburg, VA, USA					
4.	Dr. Amer Fayad	Asst. Program Director	IPM CRSP Office of International Research, Education and Development (OIED)	International Affairs Offices Virginia Polytechnic Institute and State University, 526 Prices Fork Road(0378), Blacksburg, VA 24061, USA	Tel: Office:540/231-9668 Fax:540/231-3519 Email: afayad@vt.edu
Biocontrol Research Laboratories (BCRL), Bangalore, India					
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