

IPM CRSP Trip Report

Country Visited: Tajikistan

Dates of Travel: 6-4-2011 to 6-13-2011

Traveler's Name and Affiliation: Dr. Naidu A. Rayapati, Washington State University, USA

Purpose of Trip:

(1) To conduct pest and diseases diagnostics workshop in association with Central Asia Regional Project, (2) To GIVE virology lectures to students at Tajik National University, (3) to visit field research/demo sites associated with IPM CRSP research, and (4) develop joint work plans between Central Asia Regional Project and the global project International Plant Virus Disease Network.

Sites Visited: Dushanbe, Hissor and Muminabad areas in Tajikistan

Description of Activities/Observations:

- **June 6, 2011: Participation in the Central Asia Regional Project meeting and visit farmers fields to collect potato samples with virus disease symptoms for the diagnostics workshop.**

Attended the Central Asia Regional Project meeting in the morning. US participants were: R. Muni Muniappan, IPM CRSP Director from Virginia Tech; Karim Maredia, George Bird, Walter Pett, Linda Racioppi, and Zahra Jamal from Michigan State University; Frank Zalom, UC-Davis; Mustapha El-Bouhssini from ICARDA; Ravsa Mavlyanova from AVRDC and host country representatives from Tajikistan (Nurali Saidov), Uzbekistan (Barno Tashpulatova) and Kyrgyzstan (Murat Aitmatov). IPM CRSP project and Various activities in each of the three countries were reviewed by host country representatives in Tajikistan, Kyrgyzstan and Uzbekistan. Muniappan provided his perspectives about the Central Asia Regional project activities. This provided an opportunity for me to gain a comprehensive picture of activities in the region and how to integrated research and capacity building activities of the Global Theme Project "International Plant Virus Disease Network" (IPVDN). In the

afternoon, I visited, along with other IPM CRSP team members, a few potato fields and collected symptomatic samples for the diagnostic workshop.

- **June 7, 2011: Participation in the pest and diseases diagnostic workshop at Tajik National University**

The inaugural function of the workshop was attended by Professor N.S. Saidov, Rector of Tajik National University, Academician H.M. Akhmadov, President of Tajik Academy of Agricultural Sciences, Muni Muniappan, Director of the IPM CRSP and Karim Maredia, PI of the Central Asia Regional Project. After a group photo, the workshop was started with lectures by US scientists. Due to the nature of background of the participants from Tajikistan, Kyrgyzstan and Uzbekistan, basic information about pests and diseases were provided in all lectures given by the US scientists. George Bird gave lecture on Nematology and Megan Kennally talked about the National Plant Diagnostic efforts in the US and IPDN of the IPM CRSP. Subsequently, host country participants from Kyrgyzstan presented their programs on crop protection and farmer education programs. I prepared my presentations and discussed about virus diseases with workshop participants.

- **June 8, 2011: Participation in the pest and diseases diagnostic workshop at Tajik National University**

In the morning, Megan Kennally gave a lecture on basics of fungal diseases. This was followed by my lecture on IPVDN Global theme activities and general properties and diagnosis of virus diseases. Mustapha El-Bouhssini presented entomology work conducted on wheat at ICARDA. In the afternoon, concurrent sessions on laboratory exercises on diagnosis of insect pests, nematodes and fungal and viral diseases were conducted. I demonstrated the detection of Potato virus Y (PVY) in potato samples using PVY-specific immunostrips. Frank Zalom helped me with this activity. Participants asked several questions about diagnosis of viruses and Frank and I explained both lab- and field-based approaches for diagnosis of virus diseases. Several undergraduate students from Tajik National University also attended these demonstrations and showed great enthusiasm for virology.

- **June 9, 2011: Visiting IPM trials and farmers fields**

Along with IPM CRSP team and workshop participants, I visited an IPM demonstration plot of wheat at Turdi village in Hissor district and a tomato field trial in Kahramon village in Shahrinav district. I monitored a few potato and onion fields and identified Potato virus Y on potato using virus-specific immunostrips and Iris yellow spot virus on onions, based on characteristic symptoms. I also demonstrated how to use immunostrips for field diagnosis of PVY for the workshop participants. I collected representative samples and brought to the hotel for spotting onto FTA cards.

- **June 10, 2011: Visiting the University of Central Asia and Tajik National University**

Along with the IPM CRSP team members and workshop participants from Kyrgyzstan, I visited the University of Central Asia's (UCA) Mountain Society Research Center. Presentations about the Aga Khan Development Network were made and the MOU with Michigan State University was discussed. The IPM group discussed potential areas of interest between IPM CRSP and UCA. In the afternoon, I gave a lecture on virus diseases for the undergraduate students at the Tajik National University.

- **June 11, 2011: Visit IPM CRSP trials in Muminabad**

The IPM CRSP team travelled from Dushanbe nearly 300 KM to a potato farm in Muminabad district. In addition to potato, the farmer was growing a small area of corn, beans, cucumber and other flowering plants. I observed high incidence of virus diseases in the potato field. I also observed mosaic symptoms in peas and bean grown adjacent to potato field. I collected several symptomatic samples from potato, beans and peas and brought to the hotel for spotting onto FTA cards.

- **June 11, 2011: Visiting the University of Central Asia and Tajik National University**

I processed all samples collected during field visits and extracts were imprinted on FTA cards. In the evening, the IPM CRSP Central Asia Regional Program

team members discussed about work plans for year 3. I presented about virus-related activities in the region during year 3 of the IPVDN project.

Training Activities Conducted

Program type (workshop, seminar, field day, short course, etc.)	Date	Audience	Number of Participants		Training Provider (US university, host country institution, etc.)	Training Objective
			Men	Women		
Lecture on diagnosis of viruses for workshop participants	June 8	77	32	45	Rayapati (WSU)	To increase knowledge about virus diseases and their diagnosis
Hands-on demonstration of virus diagnosis for workshop participants and students	June 8	26	10	16	Rayapati (WSU), Frank Zalom (UCD)	To demonstrate virus detection using immunostrips
Lecture on viruses for undergraduate students	June 10	67	27	40	Rayapati (WSU)	Open lecture on viruses for the benefit of undergraduate students at Tajik National University

Suggestions, Recommendations, and/or Follow-up Items:

- Based on discussions with IPM CRSP team members and diagnostic workshop participants, there is a strong need for conducting research and capacity building activities related to diagnosis and management of virus diseases in the Central Asia Region (Tajikistan, Kyrgyzstan and Uzbekistan). The IPVDN should enhance its activities (both research and capacity building) in the region in partnership with the Central Asia Regional Project.
- Rayapati should visit all three host countries and conduct needs assessment for research and capacity building for virus research.

- The Dean of Tajik National University expressed a strong need for building virology teaching for undergraduate students. Rayapati should consider giving more lectures to these students during his future visits to Tajikistan.

List of Contacts Made:

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