

Feed the Future: Innovation Lab for Integrated Pest Management Trip Report

Country(s) Visited: United States of America

Dates of Travel: 29 August, 2016

Travelers' Names and Affiliations: Ram Bahadur Khadka, Nepal Agricultural Research Council

Purpose of Trip: Graduate Study

Sites Visited: The Ohio State University, Department of Plant Pathology, Ohio Agricultural Research and Development Center, Wooster, Ohio

Description of Activities/Observations:

I traveled from Nepal August 29 2016 and arrived in Wooster on 1st September 2016. For this reporting period (September 1 – November 23, 2016) I have worked on molecular characterization of *Trichoderma* and *Fusarium* isolates collected from different locations of Nepal. The *Fusarium* isolates were isolated from ginger rhizome infected with rhizome rot disease, which is considered to be the biggest challenge of ginger production in Nepal. The fungal isolates were re-cultured in potato Dextrose Agar medium, then the monoconidial culture of each isolate was prepared. DNA was extracted from each monoconidial culture for ITS sequencing. DNA extracts were amplified by polymerase chain reaction using primers: ITS 4 and ITS 5; subsequently, the selected DNA samples were submitted to Plant Microbes Genomic Facility (PMGF), OSU Columbus for ITS sequencing. The result showed that one of the *Fusarium* isolates was found to be 95% identical with the *Fusarium solani* while another isolate was 99% identical with *Fusarium oxysporum f. sp. cucumerinum*. To confirm the species, it will be inoculated in ginger plants under environmental conditions appropriate for development of ginger rot disease. The identification of *Trichoderma* isolates is in progress.

In addition, a study on the mycelial growth performance of Nepalese *Trichoderma* isolates was started under various environmental conditions such as different pH (ranging from 3.0 to 8.5), different water activities (0.94 to 0.99) and different temperatures (10-45 °C).

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		
Graduate Study	29 Sept 2016	1	1	0	The Ohio State University, Department of Plant Pathology	To acquire the advanced knowledge and skills in plant pathology and plant disease diagnosis

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

The graduate study program is just started.

List of Contacts Made:

Name	Title/Organization	Contact Info (address, phone, email)
Dr. Sally A. Miller	Professor, Department of Plant Pathology, The Ohio State University Advisor	miller.769@osu.edu (330) 263-3678 Office: 227 Selby Hall, 1680 Madison Ave., Wooster, OH 44691
Dr. Pierce A. Paul	Associate Professor, Department of Plant Pathology, The Ohio State University Student Advisory Committee Member	paul.661@osu.edu (330) 263-3842 Office: 115 Selby Hall, 1680 Madison Ave., Wooster, OH 44691
Dr. John Cardina	Professor, Department of Horticulture and Crop Science, The Ohio State University Student Advisory Committee Member	cardina.2@osu.edu (330) 263-3644 Office: 110 Williams Hall, 1680 Madison Ave., Wooster, OH 44691
Dr. Steven Culman	Assistant Professor and State Specialist in Soil Fertility, School of Environment and Natural Resources, The Ohio State University Student Advisory Committee Member	culman.2@osu.edu 330-263-3787 Office: 130 Williams Hall, 1680 Madison Ave., Wooster, OH 44691