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## Program of International Workshop

### *“Enabling capacity in production and application of bio-pesticide and bio-fertilizer for soil-borne disease control and organic farming”*

*(7-9 May 2019, Hanoi, Vietnam)*

#### 1. Rationale

The “intensive & chemical-farming” for the past 50 years all over the world have been detrimental to soil health and water quality, leading to an increase in plant diseases and other pest problems. Important soil-borne pathogens include fungi, fungi-like organisms, bacteria as well as viruses and plant parasitic nematode. Soil-borne diseases are one of the major factors contributing to low yields of agro- products. Most soil-borne pathogens are difficult to control by conventional strategies such as the use of resistant cultivars and synthetic pesticides. Soil application of fungicides is expensive and deleterious to non-target microflora. Biological control has become a critical component of plant disease management and it is a practical and safe approach in various crops. Bio-protectants provide a unique opportunity for crop protection, since they grow, proliferate, colonize and protect the newly-formed plant parts to which they were not initially applied. Most soil-borne plant pathogens causing root and foot rots in older plants are usually less prevalent in organic farm than in conventional/chemical farms.

Organic farming is gaining worldwide acceptance and is becoming a major tool for sustaining the quality of degraded soils. There is considerable interest in substituting biologically-based inputs for chemicals to manage plant diseases because of concerns over environmental or human health. One such approach is to apply organic amendments to soils to suppress soil-borne diseases. The use of bio-agents, such as bio-fertilizers or bio-pesticides is an integral part of organic farming, especially in vegetable cultivation. The nature of the organic amendments, the microorganisms present, the properties of the soil, and environmental conditions are key factors that can influence the populations of soil-borne plant pathogens and the crop to be protected. Using organic amendments, antagonistic microorganisms and phyto-chemicals in controlling soil-borne root infecting fungi offers an alternate strategy to the prevalent use of synthetic pesticides.

#### 2. Objectives

- Review current status/update of soil-borne diseases problem and management/control strategies of soil-borne diseases in ASPAC countries.
- Explore promising-sources of microorganism and common organic materials and its potential & demand of utilization/adoption.
- Share the potential innovative technologies which can be adopted for soil-borne disease control and organic farming.

### 3. Workshop Program

**May 6 (Mon):** Arrival of overseas participants and Vietnamese participants from the South

**May 7 (Tue):** Workshop Day 1

Time	Activities	In charge person
8:00-8:30	Registration	VAAS/FFTC
8:30-8:45	<b>MOU Signing Ceremony (VAAS-FFTC)</b>	VAAS/FFTC
	Speech from VAAS	VAAS President
	Speech from FFTC	FFTC Representative
	SIGNING OF MOU (In the Presence of WS Delegates and Participants) <ul style="list-style-type: none"> <li>• Signing by VAAS</li> <li>• Signing by FFTC</li> <li>• Exchange for signing</li> <li>• Hand shake, display the signed MoU (Two copies of MOU need to be signed)</li> <li>• Applause for congratulation from delegates and participants</li> </ul>	
<b>OPENING SESSION</b>		
8:45-9:00	Opening remark from FFTC	FFTC Representative
	Welcome remark from VAAS	VAAS President
	Introduction to meeting agenda and participants	VAAS Representative
9:00-12:00	<b>MORNING SESSION: Theme 1: Soil-borne diseases problem and its management/control strategies (chaired by FFTC Representative )</b>	
9:00-9:10	Keynote	Prof. Nguyen Hong Son (VAAS Vietnam)
9:10-9:40	Review on soil-borne pathogen/diseases research in Taiwan and other countries (or Review on biocontrol of soil-borne pathogen/diseases research in ASPAC countries).	Dr. Chaur-Tsuen Lo (National Formosa University)
9:40-10:10	Emerging trends in biocontrol of soil pest and diseases concept and capacity building	Dr. Malvika Chaudhary (CABI-SEA)
10:10-10:30	Soil microbiology and its interaction with plant health in agro ecological systems	IRD Vietnam
10:30-10:40	<i>Tea break</i>	
<b>COUNTRY PRESENTATION</b>		
10:40-11:10	The soil-borne pathogen/diseases problems and management strategies for industrial crop (coffee, pepper): Experience from Vietnam	Prof. Nguyen Van Tuat (VAAS)
11:10-11:40	The soil-borne pathogen/diseases problems and management strategies for annual crops (some vegetable, tomato, chili, root and tuber crops etc): Experience from Vietnam	Dr Nguyen Duc Huy – Dept. Plant Pathology – Vietnam National University of Agriculture
11:40-12:10	The soil-borne pathogen/diseases problems and management strategies for fruit trees production: Experience from Vietnam	Dr Dang Thi Kim Uyen (SOPRI/VAAS)
12:10-13:40	<i>Lunch break</i>	
13:40-17:10	<b>AFTERNOON SESSION - Theme 1 (continuation) – COUNTRY</b>	

Time	Activities	In charge person
	<b>PRESENTATION - (chaired by Prof. Dr. Nguyen Hong Son)</b>	
13:40-14:10	Development of a Novel Soil-borne Disease Management Strategy, Health Checkup Based Soil-borne Disease Management (HeSoDiM)	Dr Shigenobu Yoshida (NARO - Japan)
14:10-14:40	The soil-borne pathogen/diseases problems and management strategies: Experience from Malaysia	Dr Ganisan Krishnen (MARDI)
14:40-15:10	The Soil-borne Pathogen/Disease Problems and Management Strategies: Experience from Indonesia	Dr. Surono (Indonesian Soil Research Institute)
15:10-15:40	Potential of biological products on the organic approach to control the dominant soil-borne plant pathogens: Experience from Thailand	Dr. Chainarong Rattanakreetakul (K.U)
15:40-16:40	Biocontrol of Fusarium wilt of solanaceous crops: the Philippines experience	Dr. Eufrocino Marfori (UP)
16:40-17:10	Discussion	
17:10	Wrap up theme 1	Prof. Nguyen Hong Son
	<b>Welcome party</b>	<b>Hosted by FFTC</b>

### May 8 (Wed): Workshop Day 2

Time	Activities	In charge person/speaker
8:30-9:00	Registration	VAAS/FFTC
<b>9:00-12:00</b>	<b>MORNING SESSION - Theme 2: The production potential and utilization demand of bio-pesticide and bio-fertilizer for soil-borne disease control (chaired by FFTC Representative)</b>	
9:00-9:30	The promising sources of microorganism and organic for bio-fertilizer production in Vietnam.	Prof. Dr Pham Van Toan (VAAS)
9:30-10:00	The promising sources of microorganism and organic for bio-pesticide production in Vietnam.	Mr Trinh Xuan Hoat PPRI/VAAS
10:00-10:30	Importance of the microbial quality of commercial biofertilisers and biopesticides and how CMBP network can contribute to improve them in SEA	Dr Didier Lesueur Common Microbiology Biotechnology Platform (AGI-CIAT-CIRAD), CIAT Asia office
10:30-10:45	<i>Tea break</i>	
10:45-11:15	Application of bio-control agent and other practices for controlling strawberry anthracnose in Taiwan	Dr. Tsung-Chun Lin (National Chung Hsing University)
11:15-11:45	Bacillus velezensis strain GH1-13 reveals agriculturally beneficial properties by enhancing plant growth and suppressing fungal pathogens	Dr. Sang Yoon Kim (Yonsei University, Korea)
11:45-12:00	Wrap up theme 2	
<b>12:00-13:30</b>	<b>Lunch</b>	
<b>13:30-17:00</b>	<b>AFTERNOON SESSION - Theme 3: Innovative bio-technologies or/and bio-products for soil-borne disease management/control and organic farming (Chaired by Dr Dao The Anh)</b>	
13:30-14:00	Construction of organic soil based on SOIL FERTILITY INDEX (SOFIX)	Prof. Motoki Kubo Ritsumeikan University (Japan)
14:00-14:30	Application of bio-products to control plant parasite nematodes and soil born diseases on black pepper and	Dr Nguyen Thi Chuc Quynh (PPRI/VAAS)

<b>Time</b>	<b>Activities</b>	<b>In charge person/speaker</b>
	coffee in Vietnam	
14:30-15:00	Efficacy of bio-pesticides developed by Jianon Enterprise Co., Ltd. for controlling of soil-borne diseases caused by <i>Ralstonia solanacearum</i> and <i>Fusarium</i> spp. in Taiwan.	Dr I-Chang Yang Jianon Enterprise Co., Ltd., Taiwan
15:00-15:15	<i>Tea break</i>	
15:15-15:30	Presentation 1 from Murawa Biochemical Company	Mr. Myiachi Kato (General Manager)
15:30-15:45	Presentation 2 from Murawa Biochemical Company	
15:45-16:00	Bacteria based liquid supplements (from Ando Tsusyo Company)	Mr Shinya Kyoda (General Manager)
16:00-16:15	Adopting Japanese Uchishiro bacteria for organic manure in Vietnam (from Suydensya Ltd.Co)	Mr. Kentaro Uchiyama
16:15-16:30	Presentation from Okada Manufactory	Ms. Nobuko Ozawa International Sales Chief
16:30-16:45	Presentation from Daimasa Engineering	Mr. Yuki Takano (General Manager)
16:45-17:00	Wrap up theme 3	
17:00-17:30	<i>Tour visit to the VAAS's organic field-trials (In the VAAS campus)</i>	<i>Int'l Cooperation Dept of VAAS</i>
	<b><i>Farwell party</i></b>	<b><i>Hosted by VAAS</i></b>

**May 9 (Thu):**

AM: Field visit to Organic Vegetable Farm/Cooperative in Thanh Xuan commune, Soc Son district, Hanoi City

PM: Visit to Thanh Chuong Palace (in Soc Son district)

**May 10 (Fri):**

Departure of overseas participants