Trip Report

Traveler's Name: R. Muniappan, Director, IPM Innovation Lab

Dates of Travel: May 20-27, 2017

Description:

May 20: Left Blacksburg at 5.00 am.

May 21: Reached Ho Chi Minh City at 8.30 pm via Washington DC and Tokyo.

May 22: 6.30 am: Mr. Tuan of SOFRI picked John Bowman and I and traveled to Tien Giang.

9.00 am: Dr. Nguyen Van Hoa, Director, SOFRI arranged a meeting. Members present were staff from the Plant Protection Division at SOFRI, a representative from PPD, and representatives from private industries involved in procurement, packaging, and marketing of longan and dragon fruit. Mr. Nguyen Thanh Hieu gave a PowerPoint presentation outlining progress made in research and extension activities on longan, lychee, dragon fruit, and mango in the project.

SOFRI has completed baseline surveys of these crops. Women were involved in fruit packing operations more than in production activities.

In dragon fruit, canker (brown spot) (*Neoscytalidium dimidiatum*), anthracnose and thrips are major problems. SOFRI's invention of bagging dragon fruits at the flowering stage prevents canker development and fruit fly (*Bactrocera dorsalis, B. tau, B. correcta*) infestation. APHIS requires Viet GAP implementation in dragon fruit orchards. IPM is a part of Viet Gap and Global GAP.

In mango, fruit flies, leafhopper (*Idioscopus niveosparsus*), and anthracnose are problems. Methyl eugenol and protein bait traps are used for fruit fly control. Azoxystobin+Copper hydroxide is used for anthracnose control.

In lychee, fruit borer, stinkbug and anthracnose are problems. Because of warm winter season, lychee trees went into vegetative phase resulting in over 80% reduction in flower production.

Currently longan, lychee, rambutan, and dragon fruit are exported to U.S.A. Star fruit and mango are in the process of obtaining permit to export to U.S.A.

In the afternoon, we first visited a model farm of Mr. Nguyen Van To who practices IPM recommendations. Afterwards we visited Mrs. Huynh thi Tham's farm wherein she has been placing plastic sleeves on dragon fruits to control canker and fruit flies.

In the evening, we visited Nha May Xuly Hoi Nhiet Nong San vapor hot vapor treatment facility owned by Mr. Nguyen Khac Huy where dragon fruit and mango were treated at 46.5°C and 47°C, respectively, for four hours before export. After treatment, fruit containers are held at 2°C until they reached their final destinations.

There are four hot vapor treating companies in Ho Chi Minh City and one in Ha Noi.

May 23: In the morning, we visited Nhi Qui Commune longan farms. These farms are Viet GAP certified and they adopt IPM technologies.

At noon, we visited Mr. Nguyen Van Tung's longan fruit collection and packaging center. He is linked with An Huu Edor longan production group of farmers at An Huu Commune of Cai Be Tri district, Tian Giang province. The packaged product is sent to Ho Chi Minh City for irradiation. He either sells the product to an exporter or exports directly to U.S.A. He processes 18 tonnes per week.

Farmers of this commune mentioned that by adopting IPM, they reduced number of sprays in longan fields from eight to four. The IPM adopted produces fetches 42,000 Dang/Kg whereas non-IPM produce gets 32,000 Dong/Kg. Cost of bagging is 6,000 Dong/Kg. Irradiation cost is 11,000 Dong/Kg. After irradiation, he sells it at 60,000 Dong/Kg to an exporter at Ho Chi Minh City and for 72,000 Dong/kg for importer in the U.S.A.

May 24: 9.00 am: John Bowman, Nguyen Van Hoa, Nguyern Thanh Hieu, Do Hong Tuan and I visited USAID office at Ho Chi Minh City and met with Mr. Steven Berlinguitte and Ms. Tang. We explained progress made in the IPM IL Fruit Crops IPM project in Vietnam. He was interested in the outreach activities of the project. We also discussed use of mass media in dissemination of project findings. He suggested to us developing contacts with American Chamber of Commerce in Vietnam.

11.00 am: We visited Plant Protection Department in Ho Chi Minh City and met with Le Van Thiet, Deputy Director General, Tran Thanh Tung, Director, Southern Pesticide Control and Research Center and other staff members. Mr. Thiet mentioned that the government is in the process is developing an IPM program for rice, vegetable and fruit crops. Tung mentioned that there is collaboration with IR-4 project for pesticide registration and Maximum Residue Level (MRL) determination for pesticides used in dragon fruit production. Fungicide Amistar is used for control of canker disease on dragon fruit which is a mixture of two active ingredients. FAO has been implementing rice IPM for the past 30 years. World Bank was involved in coffee and rice production. GIZ supported rice IPM and farmers' training in the Mekong region. PPD's main concern is pesticide residue in horticultural crops and pesticide resistance development in rice pests.

We informed the group about the impending danger of invasion of South American tomato leafminer, *Tuta absoluta*, possibly sometime in 2018 in to Vietnam and suggested them to get prepared for monitoring and management of this pest.

3.00 pm: John Bowman and I traveled to Ha Noi. Mr. Nguyen Thanh Hieu and Mr. Do Hong Tuan followed us in a 5.00 pm flight.

May 25: 9.00 am: Dr. Ngo Xun Vi (PPRI), Mr. Hieu, Mr. Tuan, Ms. Nguyan Thi Kim Hoa (PPRI), John Bowman and I traveled to Huang Yen.

11.00 am: Met with Mr. Nguyen Van Cuong, Director and Ngyyen Van Dai of Plant Protection Sub-Division at Huang Yen province. The director mentioned that longan is an important crop of the province and other crops of importance are rice, lychee, orange, guava, and vegetables. He was interested in implementing IPM programs in his province.

1.00 pm: Visited Ne Chau cooperative at Hong Nam Village commune and met with Mrs. Tran Thi Bac, Director of the cooperative of logan growers. This cooperative has about 80 households and each farm is only 0.2 to 0.3 hectares in area. The variety of longan grown is Hung Chi. The cooperative adopts Viet

GAP, of which IPM is one of the components. Since adopting IPM, farmers spray pesticides only twice a season. Before adopting IPM, they sprayed 10 times. Major pest problems are powdery mildew, anthracnose and fruit borer. Witches' broom is a minor problem.

Potassium chlorate is applied to the soil around longan plants to induce flowering. Chlorpyriphos sprayed once per season for control of fruit borer. Stinkbugs and cicadas are miner pests.

4.00 pm: Visited Thanh Hai Commune at Thanh Ha, Hai Duaong and met with the lychee farmers Mr. Nguyen Van Luan and Nguyen Van Hung. Powdery mildew, anthracnose, fruit borer, and stinkbug are problems. Eriophyid mite causing scarlet colored erineum is a miner problem.

Warm winter this year induced vegetative growth in lychee and reduced flower production by 80% in this region.

May 26: 10,30 am: John Bowman, Hieu, Tuan and I visited Plant Protection Department (PPD) of Ministry of Agriculture and Rural Development (MARD) and met with Dr. N.Q. Duong, Deputy Director General, Dr. N.T. Anh, Plant Protection Division, and Mr. N.Q. Hieu, Director, International Affairs. PPD interested in the IPM of rice, coffee, black pepper, cashew, rubber, cassava, and fruit crops. The Deputy Director General wanted information on IPM packages of longan, lychee, dragon fruit and mango by SOFRI so that he could transfer them to farmers through his provincial officers.

It was mentioned that Vietnam is planning on exporting star fruit to U.S.A in the near future. Only about 4,000 hectares of star fruit is grown in one of the southern provinces. Root rot is a major problem of this crop.

1.30 pm: We visited USAID mission at Ha Noi and met with Dr. Michael Trueblood, Director, Economic Growth and Governance. We briefed him the IPM Innovation Lab Fruit Crops IPM project activities in Vietnam. He was interested in the dissemination of information created in this project. Mr. Hieu mentioned that SOFRI has established eight model farms in the south and three in the north. Several field days have been conducted in these model farms.

3.20 pm: We visited FAS office at the U.S. Embassy and met with Dr. Mark Dries, Ms. N.T. Huong and Ms. P.M. Thu. Dr. Dries mentioned that Vietnam is one of the top 10 countries receiving imports from the U.S. and Vietnam is the 11th largest exporter to the U.S. It exports $3.5 billion to the U.S. and imports $3.0 billion of agricultural products from the U.S.

Dr. Dries emphasized having good relationship with PPD, tracking MRL in fruit crops, pesticide registration, increasing use of bio-pesticides and working with extension. He asked us to contact Dr. Prakash Hebbar for regulations governing hot vapor treatment and irradiated fruits exported to U.S. from Vietnam.

May 27: 12.50 am: I left Ha Noi and reached Blacksburg at 9.30 pm.

Recommendations:

SOFRI should publish peer-reviewed articles on IPM packages of longan and dragonfruit.

SOFRI should prepare extension brochures on IPM packages of longan and dragonfruit and provide them to PPD.

PPD should contact APHIS for the possibility of exporting longan, dragon fruit, lychee, rambutan, and star fruit with hot vapor treatment instead of irradiation.

SOFRI should send Dr. Hanh to Virginia Tech for writing up peer-reviewed articles as well as to take a couple of intensive English courses.