

**WORKSHOP ON BIOSECURITY IMPLEMENTATION OF SOUTH AMERICAN LEAF
BLIGHT OF RUBBER IN THE ASIA PACIFIC REGION
12 - 16 JANUARY 2015
BANGKOK, THAILAND**

Summary report

The APPPC workshop on biosecurity implementation of SALB of rubber was convened from 12-16 January 2015 in Bangkok, Thailand with participation of twenty-nine (29) delegates from twelve (12) countries as well as experts from Australia and Malaysia in collaboration with the Department of Agriculture of Thailand. The objectives of the workshop were to train and establish core group in implementing the SALB PRA and RSPMs/ISPMs concerned in rubber growing countries of the APPPC region; harmonize and standardize the collection of SALB surveillance data based on ISPM 6; analyze and report by applying electronic devices (p-tracker); maintain Pest Free Area in line with ISPM 4; fulfill the pest reporting obligation in line with ISPM 17. The trainings covered the effect of SALB PRA and ISPMs/RSPMs, procedures on agriculture trade procedure from South American SALB infested countries, surveillance system to maintain Pest Free Area (PFA), the introduction of P-tracker as a tool for surveillance data management and sharing of information, management of SALB, quarantine guidelines and creation of public awareness, as well as other important leaf diseases, exotic insects and diseases of rubber. The participants also shared country status reports indicating information on rubber producing area of the country, previous efforts to make use of the training materials and most important their future plans on protection of SALB to be conducted in their countries particularly on the surveillance program. The surveillance information management systems (SIMS) as well as the use of P-Tracker on recording and maintaining PFA of SALB were introduced in depth by Mr. Christopher Dale, the expert from Australian International Plant Health Programme (IPHP), Department of Agriculture, which was followed by a day field practice of pest data collections.

The participants proposed the following general suggestions for follow up actions:

- 1) Exploring possibility of inclusion of the development of protocol (harmonized) of SALB surveillance and diagnostic in the work plan of the SALB working group for year 2016 - 2017. It shall include:
 - a. Development of the surveillance system i.e. one year for pilot survey, following year for full-scale survey;
 - b. Set up a technical working group for development and harmonization of surveillance protocol;
 - c. The NPPOs from participating countries may propose the SALB diagnostic protocols to be considered by the IPPC. IPPC may facilitate experts to help the development of the protocol;
 - d. A blog has been set up by Malaysia and other member countries can access this site freely. However, the blog spot needs updating on information and should be used as the platform to communicate and sharing of information between

countries. All training materials, developed in previous workshop, can be accessed and downloaded at Website link: SALB_Asia.blogspot.com

- 2) Encouraging countries to utilize training materials provided by APPPC for awareness on SALB in the rubber growing countries.
- 3) Continual training of NPPO staff/stakeholder in country - including translation of public awareness and training materials to local language for the stakeholders' training usage is very important.
- 4) Training in Brazil (regional/country budget: to encourage countries to allocate budget for sending country experts); encouraging countries to take necessary action on other rubber plant pest concerned.
- 5) The NPPOs of rubber growing countries in the region are suggested to submit a proposal on development of SALB diagnostic protocols to the IPPC secretariat. IPPC may consider development of SALB diagnostic protocols.
- 6) Each country to have its own set of conditions and mitigations for SALB; guidelines for treatment can be harmonised, but import conditions can vary between different importing countries. Bilateral agreement foresees as a platform to discuss on the issue of exporting countries being a non-rubber growing area, which might require different import conditions.

Following specific recommendations were made by participants:

- 1) Suggest to conduct specific PRA by rubber growing country, if required.
- 2) Development of surveillance and diagnostic protocol .
- 3) Training of pathologist is crucial for identification of symptom and diagnostic.
- 4) Countries shall use contingency plan guidelines on SALB incursion, which has been developed and adopted, for national action plan for SALB in each country.
- 5) Data could be maintained by respective NPPO and/or other rubber research institute of the country for governance of surveillance data. Due to data sharing issue, the country might come out with their own database or set up i-cloud system for data management. Related to declaration or sharing of information to outside of the country; under the obligation of pest reporting, NPPO shall inform IPPC on the pest incursion and this include SALB.
- 6) P-tracker is one of the tools that can be used by all related countries to do surveillance. Countries shall request some funding and convince their authority on the benefit and positive value shown by using the P-tracker to assist in collecting the information and data management.
- 7) All rubber growing countries are recommended to conduct a minimum of 2 surveys per year.

N.B. It was hoped that participants of the workshop would undertake follow-up actions such as conducting surveillance program on SALB in their country and use the reference materials accordingly. It was encouraged to explore the P-tracker as one of surveillance practical tools for surveillance activity.

REPORT

1. BACKGROUND

The Pest Risk Analysis (PRA) of SALB was adopted at the 25th Session of the Asia and Pacific Plant Protection Commission in Beijing, China in 2007. The regional standard phytosanitary measures (RSPM) on protection against SALB based on the PRA was adopted at the 26th session of APPPC in September 2009 in New Delhi India. A detailed guideline on import procedures from SALB endemic countries to the region was developed at the APPPC workshop held in Malaysia from 13-17 December 2010 for prevention of introduction of SALB of Rubber. The APPPC working group on SALB, which was established by the 26th session and led by Malaysia facilitated a series of activities. These activities include the collection and editing of reference materials for publication as well as developing training program. Subsequently, Malaysia hosted another workshop entitled 'Workshop to Develop Training Program and Reference Materials for Protection against South American Leaf Blight' in Melaka, Malaysia from 21 - 25 November 2011. In this workshop, several materials on SALB were developed for regional training on prevention of introduction of SALB into the region.

The 27th session of APPPC held in Philippines from 15-19 August 2011, the meeting endorsed the SALB working group proposal for two follow-up activities to be conducted in the 2012 and 2013. These were a training workshop using the reference produced in 2011 and a training workshop on diagnostics. A training workshop entitled 'Workshop on Training of Trainers on Protection against South American Leaf Blight of Rubber in the Asia-Pacific Region' was held in Penang, Malaysia from 2 - 6 July 2012. However, the diagnostic training workshop on SALB to be held in Brazil in 2013 had to be postponed due to the non-availability of Brazil to host the workshop.

The 28th session of APPPC held in Jeju, South Korea in 2013, agreed to conduct a workshop in solving issues related to the implementation of the standard and import procedures with focus on surveillance system and import conditions. The objective of this workshop was to enhance the capacity building on the protection of SALB in the APPPC region, with the following specific objectives:

- 1) To train and establish core group in implementing the SALB PRA and RSPMs/ISPMs concerned in rubber growing countries of the APPPC region;
- 2) To gather feedback on the use of SALB reference materials for in country training and status on translation to local language;
- 3) To harmonize and standardise the collection of SALB surveillance data based on ISPM 6, maintaining pest free area (PFA) in line with ISPM 4 and sharing with APPPC rubber growing countries through P-tracker in fulfilling the pest reporting obligations;
- 4) To provide the opportunities for participating officers to share knowledge and gain expertise from experts in this field.

1.2 Introduction of the workshop

Mr. Yusof Othman, the representative of working group on SALB, presented the background, the objectives and expected output of the workshop. Upon the adoption of the PRA on SALB by the 28th Session of the APPPC in 2007, a Regional Standard on Protection against SALB was prepared during a workshop and subsequently the guidelines were presented and adopted by the APPPC during the 26th Session. Follow up activities were also suggested i.e. to propose country surveillance system for SALB and produce a model of system or database on surveillance data for sharing information purposes.

After the workshop session, participants are expected to come out with a national plan in developing the capacity in their countries on implementation of the SALB standard and ISPM 4, ISPM 6 and ISPM 17 especially through surveillance system and training of trainers. The participants are also expected:

- 1) To harmonise and standardise the import requirements of agriculture products from SALB infested countries;
- 2) To conduct surveillance on SALB, maintain Pest Free Area and share these information through the IPPC Portal;
- 3) To convey information to the higher management level to conduct SALB activities and review the APPPC schedule; and
- 4) To review and update the reference materials from in-country training feedback.

A total of twenty-nine (29) participants from twelve (12) countries namely: Australia, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Philippines, Sri Lanka, Thailand and Viet Nam attended this workshop, which was convened from 12-16 January 2015 in Bangkok, Thailand. Participants consisted of plant protection and plant quarantine officers who are involved in plant quarantine activities of the NPPOs and also several officers from rubber research institutes.

1.3 Workshop programme

During the workshop, ten lectures were presented covering the effect of SALB PR, ISPMs/RSPMs and procedures on agriculture trade procedure from SALB infested countries, surveillance system to maintain Pest Free Area (PFA), the introduction of P-tracker as a tool for surveillance data management and sharing of information, management of SALB, quarantine guidelines and creation of public awareness, as well as other important leaf diseases and exotic insects and diseases of rubber. The participants presented country reports indicating the information on rubber producing area of the country, previous efforts to make use of the training materials and most important their future plans on protection of SALB to be conducted in their countries particularly on surveillance program. The Workshop also included a day field trip.

2. OPENING CEREMONY

Dr. Piao Yongfan, the Executive Secretary of APPPC, on behalf of FAO/APPPC and himself welcomed the delegates to the Workshop. Dr. Piao stressed that the workshop would provide a

good opportunity to share experience on SALB from the participating countries. He thanked the Department of Agriculture of Thailand, and the Government of Thailand for hosting the workshop which was the first SALB workshop of many series ever held outside Malaysia. He mentioned that APPPC had conducted training sessions and come out with relevant publications and often these efforts were supported by Malaysia. The APPPC had recently held a Workshop in Penang, Malaysia to facilitate the training of trainers and also develop training programme on SALB for each member country. In current workshop, Dr. Piao thanked Australia for assisting in the introduction of new technology known as 'P-Tracker' which is very useful to be used for surveillance program of SALB. He mentioned an introduction workshop on P-Tracker and SIMS system had been held by APPPC collaborating with Government of Australia last June 2014 in Malaysia and each of the attended countries has been equipped with the device which is expected to be used as a part of their surveillance toolbox. He also highlighted that through the country reports' presentation , it is expected to see the contribution and follow up on the use of the training and public awareness article produced in the previous workshop; and Dr. Piao mentioned the three publications, published by FAO, namely, "APPPC RSPM No 7: Guidelines for protection against South American Leaf Blight of Rubber", "Protection against South American leaf blight of rubber in Asia and Pacific region" and "Protection against South American leaf blight of rubber in Asia and the Pacific region, Volume 2" which shall be used as guidelines during country's training programmes. Dr. Piao emphasized that the workshop should come out with substantial outputs, especially schedules of surveillance program and training programmes drafted by the participants that will be conducted in their own countries. He hoped that this Workshop will be another flagship of the regional efforts on dealing with SALB; in addition to the PRA, RSPM No.7, contingency plan and the model work plan addressing SALB, which were adopted by the previous APPPC Sessions. He also expected each participant to become the core trainers and experts of SALB; where they are responsible for conducting training and awareness programmes in their own countries.

3. UPDATE OF 28TH SESSION OF APPPC AND TRAINING PROGRAMME AND REFERENCE MATERIALS FOR PROTECTION AGAINST SALB OF RUBBER

Dr. Piao Yongfan presented the background and various activities on SALB by the APPPC and an update of the 28th Session of APPPC. Rubber growing countries are expected to:

- a. Modify the country action plan for specific area needed e.g. surveillance program, quarantine implementation and in country capacity building program;
- b. Knowledge sharing program is expected between senior experts and junior officers for prolonging the expertise;
- c. Use the reference material to established a core group of competent trainers on SALB and protection of SALB in the region upon the needs of each country;
- d. Review and update the reference materials from time to time, according to the feedback by implementers.

In 2013, there had been a plan for collaboration with counterparts in Brazil on SALB Training workshop on Diagnostic. The implementation is now expected to be held in 2015.

4. LECTURES

4.1 Lecture 1: SALB PRA and Standard - Effect on agriculture trade procedure from SALB infested country

Dr. Surapol Yinasawapun from Department of Agriculture, Thailand, presented the effect of SALB PRA and standard on agriculture trade procedure from South America SALB infested country. He mentioned the PRA on SALB has been initiated due to successive decisions at the 21st session of APPPC (1999) to develop appropriate standards and manage phytosanitary risks of SALB to APPPC region. It was established by rubber growing member countries of APPPC i.e. Thailand, Indonesia, Malaysia, India, China, Viet Nam, Sri Lanka and projected to provide scientific justification for standards developed by APPPC and member countries to manage trade-related phytosanitary risks of SALB. In the summary of risk assessment, it was taking into consideration two types of material that might be imported to rubber growing countries:

1. Host material from *Havea* species – budded stump or budwoods, foliage, flowers, fruits, seeds and plants *in vitro*.
2. Non-host material - inanimate goods or non-host organic material and inanimate goods or non-host organic material contaminated by host plant material.

Due to high demand of importation and exportation of goods from South America, viable or non-viable SALB host material can either be imported from areas considered free of SALB, and must meet the phytosanitary requirements in which each type of material sits individually as agreed by APPPC region.

Viet Nam requested an explanation on the scientific reason for repacking of the non-host item and it was explained that it is a precautionary measure to eliminate any possible contamination thru' the 1st packaging material. There is a proposal from the participants to separate the import condition by the transportation manner (by sea shipment and by air freight).

Thailand shared her experience in importation of tobacco seed from SALB country and had implemented a tight importation procedure such as ensuring the production area is located away from any rubber area, requesting the PRA from the origin country and imposing import condition and phytosanitary measures according to the PRA by APPPC.

There were a few recommendations made by countries such as Malaysia, Sri Lanka and Thailand to APPPC on findings of the latest and relevance SALB scientific documents, due to lack of documentation available in English language. Most of the journal papers are in Portuguese and APPPC participating countries would like to receive external assistance in translation of the journal into English for references.

The training of new generation of pathologists and quarantine officers on identification and management of SALB is a concern to all rubber growing countries. As most of the experts are pensioned, their experience in observing the real symptoms of SALB fungus for characteristics study and collecting the information from counterparts in Brazil is a significant assignment to be organized by APPPC. Molecular studies on SALB are also need to be concentrated on as much

as how the pathogenic studies have been done before, by Dr. Ismail Hashim and others some time ago.

4.2 Lecture 2: SALB surveillance system to maintain Pest Free Area (PFA)

Lecture 2 was delivered by Mr. Yusof Othman of Department of Agriculture, Malaysia. He explained the relevance of maintaining the pest free area in the country especially to ensure and demonstrate area freedom (the absence of SALB in an area) or places of low pest prevalence for trade purposes. This is crucial to provide methodical evidence for SALB free area in ensuring the maintenance of PFA and protecting the rubber industry for APPPC region. Effectiveness of PFA maintenance shall meet the ISPM standard of ISPM 4 - Requirements for the establishment of pest free areas, ISPM 6 - Guidelines for surveillance and ISPM 17 - Pest reporting.

Thailand agreed with the importance of maintaining PFA in every rubber growing country especially on surveillance data management. There is also a concern on whether the importing countries (APPPC regions) shall allow the exporting countries (SALB infested countries) to inspect PFA at certain period of time to ensure the data maintenance. General and specific survey for SALB is recommended every 2 years at the port of entry and nearby rubber planting area to maintain the PFA's data. Due to the establishment of SALB free area, it is important for every rubber growing country to plan a national program of SALB surveillance in providing data and evidence for APPPC in ensuring that the PFA is maintained at all time.

4.3 Lecture 3: The use of P-Tracker on recording and maintaining PFA of SALB

The surveillance information management systems (SIMS) were introduced by Mr Chris Dale, International Plant Health Programme (IPHP), Department of Agriculture, Canberra, Australia. The development of SIMS was initiated to improve the consistency of pest surveillance activities across plant health disciplines and to facilitate accurate surveillance data collection, consolidation and management. The system can then be used to generate biosecurity intelligence and strengthen biosecurity capacity at a local and regional level.

The challenge has been to collect data, consolidate it, have data verification and data analysis, and to be able to interrogate the data to generate intelligence and provide direct reports. The SIM system aims to address these challenges, simple and inexpensively, to produce consistent results in an efficient manner.

The collection of data is achieved by using a smart phone or tablet device. The data verification is a timely, intensive and important process particularly from a field perspective and as a post-consolidation procedure. The data has to be managed so it is available to all. With data analysis and subsequent interrogation the surveillance information is made accessible and available for reporting. SIMS allows for all these functions. Each of the function was to be applied and discussed in the workshop. The systems can be used by different people with different types of data to produce a range of information.

Surveillance data analysis and reporting

The system provides pest status reporting in accordance with international requirements and meets the adaptation of phytosanitary standards such as ISPM 4, 6, 8 and 17. Pest reporting can be presented in a number of forms; it details evidence of surveillance activities.

Mr Dale discussed the need to develop a suite of surveillance equipment that was convenient, user-friendly and weatherproof and he demonstrated the suitcase sized 'P-tracker' surveillance kit used by Australian surveillance teams. The kit included smart phone data collection devices, a GPS, power packs to recharge the devices in the field and a field laptop computer to consolidate and manage the surveillance data. The smart phone devices are weatherproof and shockproof, and consolidate GPS, camera and data collection functions in a handheld unit in a practical and easy-to-use tool that can be used independent of internet, WiFi or cellular networks.

Regarding data collection – the mobile device and computer software is inexpensive and is linked spatially and contextually. The data fields are generated from ISPM 6 and are linked with the collection and storage requirements. The system can be used to record specimen collection data across surveillance disciplines (entomology, plant pathology, botany, nematology etc.) as well as negative, observational and plant host data (i.e. pest absence and host distribution). P-tracker does this well, ensuring that data is collected in a consistent and uniform way.

The data collection techniques to be used in the field day were shown – with single unit examination and for transect use. The field data tables used was based on the data noted in ISPM6. After the collection process there is the consolidation procedure which allows the aggregation and quality assurance of the data from the field trip. The data extracted is transferred via Excel and with both negative and observational data, file sizes can be substantial.

The surveillance data from different activities can be aggregated – from:

- pre-border surveillance activities
- post- border surveillance; and
- publicly available data sources

Mr Dale went on to discuss why we do this collection of surveillance information. The reasons are to:

- Determine regional risks (pre-border)
- Support claims of pest absence
- Develop pest lists to justify phytosanitary measures and inform pest risk analyses
- Inform eradication and control measures

Data verification was the next step and this has processes to ensure:

- Consistency in nomenclature
- The verification of diagnostic results
- The completion of records

Regarding data storage, Mr Dale noted that the SIMS database consolidates and organizes information and allows for queries and the extraction of information, and then facilitates the sharing of information. The data in pest records should include information on the “who, what, where, when”, and result of the pest records.

The data storage method must allow data extraction. Officials must be able to obtain the information – it has to be accessible. The present records allow the development of pest lists by country, host commodity, and location. Negative records for the same criteria are extremely valuable and can provide evidence for pest absence.

This data can be analysed to provide pest status determinations, pest distribution and movement, pest incidence and pest absence.

Mr Dale noted the other applications – presence/absence data could be used, for example, for potential distributions of plant pests, the extension of range of pests due to climatic factors, and areas where there is high risk of pest establishment.

Mr Dale then discussed the features of the P-tracker data collection application, demonstrating the ISPM 6 data collection sequence to record plant health records in a consistent, accurate and efficient way. During the workshop, only the core ISPM 6 data fields are being demonstrated – about twenty five points, although the software can accommodate up to 44 data fields. Other scientists, e.g. botanists, often want climate or geographical data, and fields can be added easily to deal with these requirements. Many records also require further identification and verification and the P-tracker is able to identify these as pending records for further consideration.

Surveillance Information Management System (SIMS)

SIMS as data management tools allow large amount data to be managed effectively (specimens, observation, negative and host surveillance record).

Components that should be considered in this context are:

- File formats
- File name conventions
- File/directory structure
- Managing metadata
- Information backup

The sharing of data will need a minimum requirements and it can be done through varieties of manners; cloud, any local or international database. There is a suggestion for each of the involved countries to contribute their data and manage them with in-house database program; this is somewhat waiting on any party to manage the information. This will avoid the concern of data information sharing policies that might differ from country to country, which might need an agreement to be produced between countries to allow data access/usage. The participating countries were also suggested to buy the licence with their country funding as the initiated system had been provided to their country representative in previous APPPC Surveillance information Management programs.

4.4 Lecture 4: Design Surveillance system based on Australian experience

Mr. Chris Dale shared the Australian experience on designed surveillance system related to international Plant Health Program. They have the experience in developing a comprehensive database for pest surveillance in Timor-Leste and Papua New Guinea with assistance of p-tracker device and SIMS system. They have collected the surveillance data on pests for early detection of pests on border post of PNG, which provide the early data collection, which at the same time projects surveillance data management and demonstrates the practicality of data records-keeping, by using the SIMS systems and P-Tracker as data collection tools.

4.5 Lecture 5: P-tracker surveillance data management and sharing of information

Referring to the note on P-tracker and SIMS provided in the file, Mr. Dale demonstrated to the participants on the setting up of the forms according to the information needed by the surveillance team. P-tracker data is presented in digital format, therefore data does not need to be processed and prepared for analysis because it is already in the required format. This eliminates the possibility of errors occurring when transcribing data from the field notes to computer database and faster access to the data once it has been collected and downloaded to a PC. Data can be spatially referenced with a GPS to the field computer.

5. COUNTRY PRESENTATION

All participating countries presented their country reports which consist of:

- a. Status of rubber industry (plantation and production) in each country;
- b. Readiness of each Asia Pacific rubber growing countries to mitigate SALB introduction;
- c. Surveillance system existed for PFA;
- d. Sharing of Information;
- e. Usage of training modules and training program in each country;
- f. Diagnostic capability on SALB.

The countries' Biosecurity strategies vary depending on local conditions. Commonly the biosecurity strategy includes implementation of quarantine laws and regulations which include import requirements and an inspection system at points of entry, the Pest Risk Analysis (PRA), field and laboratory testing etc. Sampling method and diagnostic for SALB depend very much on the country's capacity. Thus some countries carry out only visual inspection and others laboratory serological (ELISA) and molecular diagnostic (PCR); also mycological analysis of the sample collected from the import consignment. For this purpose in some countries (e.g. Malaysia) laboratory staffs have been trained in Brazil on the fungus's biology and ecology. However, the counties raised a concern that there is a need for all rubber growing countries in the region to send their pathologists to develop expertise on SALB diagnostic and identification.

It was noted that for some countries there is no specific program for awareness and capacity building of SALB, but other countries have translated into local languages the training subjects using SALB modules developed by previous APPPC workshops (e.g. how to Create a Public

Awareness Program on SALB, the quarantine development history against SALB, contingency plan: detection surveys & eradication procedures and Pest Risk Analysis of *Microcyclus ulei*) as well as distribution of leaflets, banners and pamphlets. In addition to the training materials, for example, in Thailand the "Office network between DOA and ORRAF (Office of The Rubber Replanting Aid Fund)" has been established in order to share information among all interested parties as well as some additional publications were produced. Some countries are carrying out awareness programs aimed at policy makers and have developed a capacity building plan which includes development of expertise (e.g. training in Brazil), establishment and training the surveillance team as well as a quarantine inspector at the entry and post entry.

The participants also discussed that a SALB pest-free area must be maintained through the NPPO activities relating to border control for preventing the introduction and spread of SALB via goods, which are coming or transit from SALB endemic countries and rubber plantation areas, as well as annual national surveys for SALB. In addition the diagnostic of SALB should be improved by providing necessary equipment for the laboratories and development, a diagnostic protocol to be used within countries and at border control. This also requires improvement of surveillance data management and sharing among the relevant agencies in countries such as NPPOs and Rubber Research Institutes, for the purpose of verification too as well as technical skills (in detection and identification of SALB) of quarantine officers in quarantine services.

Participants agreed that there are issues of data ownership and data sharing across different organizations and this problem requires further discussion. In response to that, some countries suggested to have clearly defined agreements for data sharing to ensure pest information is available across national biosecurity systems. Thus data from regional surveys and national surveillance on quarantine pests in general and SALB in particular, should be shared.

6. SURVEILLANCE DATA COLLECTION FIELD EXERCISE

The field trip exercise was done at Rubber Research Institute in Cha Cheong Sao Province of Thailand. The participants used the P-tracker mobile devices to collect information for individual plant records with different plant age transects. Participants were divided into 3 groups and the information collected will be used for the next day lectures and demonstration. All the P-tracker devices are equipped with appendix of Surveillance Information Management Systems includes sections on P-Tracker Kit: Field use manual; and the Plant health database: Basic user manual. The sections provide step by step guidance for the use of the P-tracker and the insertion of data into the database. Additional appendices with training information include: Database training manual exercises, and P-tracker field collection training exercises.

7. GROUP PRESENTATION AND DISCUSSION

The participants gathered into 3 discussion groups and each group came up with a presentation on SALB Surveillance Operation Work Plan consisting of:

- a. Suggestion on title of the surveillance program and coordinating agency(s);
- b. Responsible authorities which will coordinate in each country;

- c. Specific or non-specific surveillance area;
- d. Time frame of surveillance program;
- e. Information will be collected during the surveillance program; and
- f. Mechanism of data reporting and sharing of information

Presentation of Group 1

Dr. Lily Eng of DoA Sarawak, Malaysia, representing Group 1:

- a) The suggested title of surveillance program is ‘*A Sustainable SALB Surveillance System Incorporating P-tracker Tools for Implementation by all APPPC rubber Growing Countries*’.
- b) The p-Tracker tool and software is suggested to be used as surveillance tools for SALB surveillance in involving country for standardization of data reporting.
- c) Sample size - as most of the plantation is large in acreage, data must be taken into the consideration of 1 - 10% of the whole plantation, depending on the resources available to the country involved and level of confidence the data might produce.
- d) The data reporting must be based on development and agreement of a minimum data standard for SALB surveillance.
- e) Implementation of SIMS is seen as very promising in assisting with data collection and reporting. Involved countries shall consider the sensitivity and confidentiality on sharing of data. Regional collaboration has to be initiated to harmonise the agreement of data sharing.
- f) Collecting methods - the sample collection suggested with leaf inspections with those in which has suspicious symptoms (as per protocol). The group was suggesting a special camera to assist photo capture activity for mature trees.
- g) Fulfilling the local regulation - The coordinating agency shall notify and initiate collaboration with local authorities for endorsement of entry to the rubber area (if needed).
- h) Pilot survey - nominate a certain area in the country or appoint a certain country to be the pilot surveillance program area. The area chosen shall represent mostly area where the full survey will be planned.
- i) Full survey - between 1-10% of the rubber plantation area in the country.
- j) Data analysis - The countries shall do data analysis and forecasting; study the risk assessment, decide the ownership of data and management of data and it is suggested to be the NPPO responsibility.

Presentation of Group 2

Dr. Duong Minh Tu, DOA, Viet Nam representing Group 2, informed the group members had suggested the title of the surveillance as ‘*Harmonization of SALB surveillance system in rubber growing countries in Asia & Pacific Region*’. As suggested by the previous group, P-tracker is suggested to be used as a tool for data collection and data management in all involved countries to ensure organized and standardized data reporting. Other suggestions presented as follows:

- a) High risk areas of SALB shall be chosen (e.g. near the airport, seaport, and other ports of entry) for the sampling activities.
- b) Surveillance shall be carried out 2 times/year (**April** - when refoilation and **July** – when climatic condition is suitable for SALB establishment and development).
- c) Usually there is no requirement needed for a quarantine inspector but for other surveyors, they need to send documents to a rubber grower from 2-3 days before doing surveillance.
- d) NPPO shall be responsible for reporting the results of the SALB surveillance to the APPPC working group, relevant stakeholders and other concerned NPPOs.

Presentation of Group 3

Group 3 was represented by Dr. Sabu of Rubber Research Institute of India. Group 3 members suggested the surveillance shall be titled as ‘*SALB Surveillance for Pest Free Area*’. Dr. Sabu mentioned that currently most represented countries do not have a specific surveillance program and the previous surveys’ data are mainly for other rubber diseases. It is suggested that the surveillance program shall be planned once a year and it will look into SALB surveillance with the other current rubber diseases surveys. Group 3 suggested other ideas as follows:

- a) Training of experts in Brazil to see the real pest symptoms and occurrence, at least 2 pathologists /country with one study visit in every five years. This is to ensure sustainability of expertise in the country.
- b) Fully utilised available literature, training articles and documentation for in - house training programmes.
- c) Current information provided from the previous workshop has become outdated and need to be updated with current studies and information. It is suggested that Brazil needs to provide latest information/ latest scientific evidence in English version as most of the article available are in Portuguese. It’s quite impossible to find a rubber researcher who can communicate and understand Portuguese in the APPPC region.
- d) In order to ensure an efficiency and uniformity, mock trial for surveillance has to be initiated and the surveillance group has to consider the high peak disease season in order to fix the time of survey activity.

At the end of the session, a few comments and suggestions have been raised:

1. Thailand had suggested on the timing of surveillance could not be restricted or specified to certain season. It is suggested it shall be dependent on the climate and the wintering season of the country.
2. Confidentiality of information - it is necessary for each country to consider confidentiality of information sharing between countries especially in usage of i-cloud sharing folders.
3. All countries confirmed that when there is any incursion of the pest, it is responsibility of the NPPO of the country to inform the APPPC and IPPC about the incursion.
4. Look for funding of resources (surveillance tools, staff, database tools and software) from the country authorities’ budgets.
5. The activity is done to propose surveillance system for field survey, but as sampling activity involves diagnostics, the surveyors need to be trained and provided with the

information that has been developed in previous SALB workshop. This is to ensure the diagnostic sampling protocol is done as regulation sets by FAO.

6. It is suggested either Malaysia or APPPC Working Group on SALB (consists of experts and representatives from APPPC and countries involved) to coordinate the collection of data from all the countries if the terms and conditions of data sharing are agreed.
7. Training of experts in Brazil - suggested more than training, maybe shall consider budget/fellowship to do research in Brazil to update the latest study on SALB by IRRDB or FAO. Allocation of budget has been provided by APPPC for training in Brazil in 2013. Proposal has been sent by Malaysia and 12 representatives from interested countries have been identified. The training is planned to be done in 2015.
8. The latest study and information from the Brazil researchers shall be provided to the APPPC countries researchers, especially on the molecular study of SALB and alternate host of the fungus as there might be a mutation or adaptation if environment changes happen.
9. Most of the countries do not have specific surveillance program for SALB incursion.
10. Sample size planning - shall be depends on the type of planting area (nurseries, farm, plantations and estates) and also location of point of entry.
11. Data collecting methods shall be done manually or online, depends on the capacity available to the country.

8. DISCUSSIONS

Conclusive highlights of the discussion:

- 1) Consistency of data management is very important to ensure the efficient data reporting and reduce data error. P-tracker could assist in reducing time on data entering and avoid on data entering error. It can be considered as a tool to standardize data reporting.
- 2) The usage of p-tracker is hoped would not make any confusion on detection of the SALB symptoms.
- 3) Training by individual country is quite difficult due to budget constraints. It is suggested to Malaysia as lead country of the working group on SALB to come out with a proposal for training program in Brazil, to be used by each involved country to propose funding to their government for training budget.
- 4) It is suggested the rubber researchers in the RRI of the country shall continuously communicate with the country NPPO for update on SALB program by APPPC including any meeting, workshop or training.
- 5) Countries are suggested to come out with a SALB task force in which consist of representatives from NPPO, RRI, research agencies and related Ministry. It might be different from country to country, as some country might have different platform such as pest management or invasive alien species task force.

9. RECOMMENDATIONS ON APPPC REGION WORK PLAN FOR SALB

Following the lectures and discussion, participants suggested future plan for the SALB program of the region and the surveillance programmes that will be conducted in their respective countries. The participants proposed the following general suggestions for follow up actions:

- 1) Exploring possibility of inclusion of the development of protocol (harmonized) SALB surveillance and diagnostic in the work plan of the SALB working group for year 2016 - 2017. It shall include:
 - e. Development of the surveillance system i.e. one year for pilot survey, following year for full-scale survey;
 - f. Set up a technical working group for development and harmonization of surveillance protocol;
 - g. The NPPOs from participating countries may propose the SALB diagnostic protocols to be considered by the IPPC. IPPC may facilitate experts to help the development of the protocol.
 - h. A blog has been set up by Malaysia and other member countries can access this site freely. However, the blog spot needs updating on information and should be used as the platform to communicate and sharing of information between countries. All training materials developed in previous workshop available to be accessed and can be downloaded. Website link: SALB_Asia.blogspot.com
- 2) Encouraging countries to utilize the training materials provided by APPPC for awareness on SALB in the rubber growing countries.
- 3) Continually training of NPPO staff/stakeholder in country - including translation of public awareness and training materials to local language for the stakeholders training usage is very important.
- 4) Training in Brazil (regional/country budget: encourage countries to allocate budget for sending country experts); and encourage countries to also take necessary action on other rubber plant pest of concern.
- 5) The NPPOs of rubber growing countries in region are suggested to submit proposal on development of SALB diagnostic protocols to the IPPC secretariat. IPPC may considered in development of SALB diagnostic protocols.
- 6) Each country to have its own set of conditions and mitigations for SALB; guidelines for treatment can be harmonised, but import conditions can vary between different importing countries. Bilateral agreement foresee as a platform to discussed on The issue of exporting countries being a non-rubber growing area which might require different import conditions.

Following specific recommendations were made by participants:

- 1) Suggested to conduct specific PRA by Rubber growing country, if required.
- 2) Development of surveillance and diagnostic protocol.
- 3) Training of pathologists is crucial for identification of symptom and diagnostic.
- 4) Country shall use Contingency plan guidelines on SALB incursion, which has been developed and adopted, for national action plan for SALB in the country.
- 5) Data could be maintained by respective NPPO and/or other rubber research institute of the country for governance of surveillance data. Due to data sharing issue, the country might come out with their database or set up an i-cloud system for data management. Related to declaration or sharing of information to outside of the country; under the

obligation of pest reporting, NPPO shall inform IPPC on the pest incursion and this include SALB.

- 6) P-tracker is one of the tools that can be used by all related countries to do surveillance. Countries shall request some funding and convince the authority on the benefit and positive value shown by using the p-tracker to assist on collecting the information and data management.
- 7) All rubber growing countries are recommended to conduct a minimum of 2 surveys per year.

10. CONCLUSION

Dr. Piao Yongfan presented his overall observations on the current workshop on 'Biosecurity Implementation of South American Leaf Blight of Rubber in the Asia Pacific Region'. His conclusions were:

- i) Awareness on SALB differs between countries as some countries are more advanced and are moving faster in trainings and public awareness and a greater amount of expertise is available in some countries.
- ii) Regarding the follow up plan, it is important that each country indicates what is to be done, that is in line with the capability and feasibility of the country. The various ideas or suggestions made should be prioritized and in line with their capability.
- iii) It is important to strengthen bilateral and multilateral cooperation between countries and agencies by sharing expertise, facilities and reference materials. Usually ministries and departments have various cooperation programmes in many countries. There is a need for inputs/intervenes from NPPOs to put interested subjects in the agenda during bilateral/multilateral discussions. There are two types of cooperation that can be carried out i.e. namely those agreed by both agencies in the same subject; and the other is that is proposed by one side but agreed by the other country.
- iv) Country recommendations could be improved by adding detailed requirements for assistance e.g. country 'A' may request country 'B' for provision of copies of posters, banners, etc. so that country 'B' may consider seriously such potential support.
- v) The APPPC working group on SALB (most participating countries of the workshop are members of the working group) is the important platform for collaboration on SALB. Members of the working group should actively and jointly work with the lead country in implementing the work plan, coordinate the follow up recommendations and cooperate among members as well as with other organizations such as the IRRDB.
- vi) Regarding gathering of information, each country should specify information needed.
- vii) The working group should present the output of the current work plan and will propose the next work plan.

The workshop was officially closed by Dr. Piao Yongfan. In his closing speech, he thanked all the participants, experts and facilitators for their contributions. He appreciated all the suggestions for surveillance program and hoped that the training materials provided in the previous workshop could assist in the surveillance program. Dr. Piao expressed his hope that upon their return, the participants would undertake follow up actions, such as conducting surveillance program on SALB, in their country and use the reference materials accordingly. He

suggested the participants to explore the P-tracker as surveillance tools for surveillance activity. He also stressed on the importance of reviewing and updating the reference materials from time to time. He hoped that the participants could be the subject matter officers (SMOs) on SALB for their respective country.

Lastly, Dr. Piao Yongfan acknowledged the contribution from the Department of Agriculture Thailand and thanked the Government of Thailand for hosting the workshop.

(all reference materials of the workshop could be downloaded from APPPC website).



timetable

<u>Day 1: Monday 12 January 2015</u>	
08.45-09.15	Registration
09.15-09.25	Welcome remarks by the Executive Secretary of Asia and the Pacific Plant Protection Commission - Dr. Piao Yongfan
09.25-09.35	Introduction of participants
09.35-09.45	Opening address by Director General, Department of Agriculture, Thailand
09.45-10.00	Group photo
10.00-10.30	Coffee break
10.30-11.15	Update of 28 th Session of APPPC meeting and training programme and reference materials for protection against SALB of rubber - Dr. Piao Yongfan
11.15-11.45	Purpose and scope of the workshop (workshop objectives and expected output) - Mr. Yusof bin Othman
11.45-12.15	SALB PRA and Standard – Effect on agriculture trade procedure from South American SALB infested countries - Thailand
12.15-13.45	Lunch
13.45-14.45	SALB surveillance system to maintain PFA - Mr. Yusof Othman
14.45-15.45	The use of P-Tracker on recording and maintaining PFA of SALB - Mr. Christopher Dale
15.45-16.15	Coffee break
16.15-17.15	Design surveillance system based on Australian experience

	Mr. Christopher Dale
17.15-17.45	Discussion
19.00	Welcome dinner by FAO
<u>Day 2: Tuesday 13 January 2015</u>	
09.00-10.30	Country presentation – SALB surveillance system and pest reporting (20 minutes each country) <ul style="list-style-type: none"> - Cambodia - China - India
10.30-11.00	Coffee break
11.00-12.30	Country presentation continued: <ul style="list-style-type: none"> - Indonesia - Lao, PDR - Malaysia - Myanmar
12.30-14.00	Lunch
14.00-15.30	Country presentation continued: <ul style="list-style-type: none"> - Philippines - Sri Lanka - Thailand - Vietnam
15.30-16.00	Coffee break
16.00-16.30	Discussion
<u>Day 3 : Wednesday 14 January 2015</u>	
07.00-15.00	Field trip at Cha Cheong Sao province
<u>Day 4 : Thursday 15 January 2015</u>	
09.00-10.30	P-tracker surveillance data management and sharing of information <ul style="list-style-type: none"> - Mr Christopher Dale
10.30-11.00	Coffee break
11.00-12.30	P-tracker surveillance data management and sharing of information- continued

12.30-14.00	Lunch
14.00-15.30	Presentation on countries' pest surveillance system
15.30-16.00	Coffee break
16.00-17.00	Presentation on countries' pest surveillance system – continued
<u>Day 5 : Friday 16 January 2015</u>	
09.00-10.30	Presentation on achievement in countries' SALB training and status on the translation into local language of the training module
10.30-11.00	Coffee break
11.00-11.30	Discussion on APPPC region work plan for SALB
11.30-12.00	Closure of the workshop

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