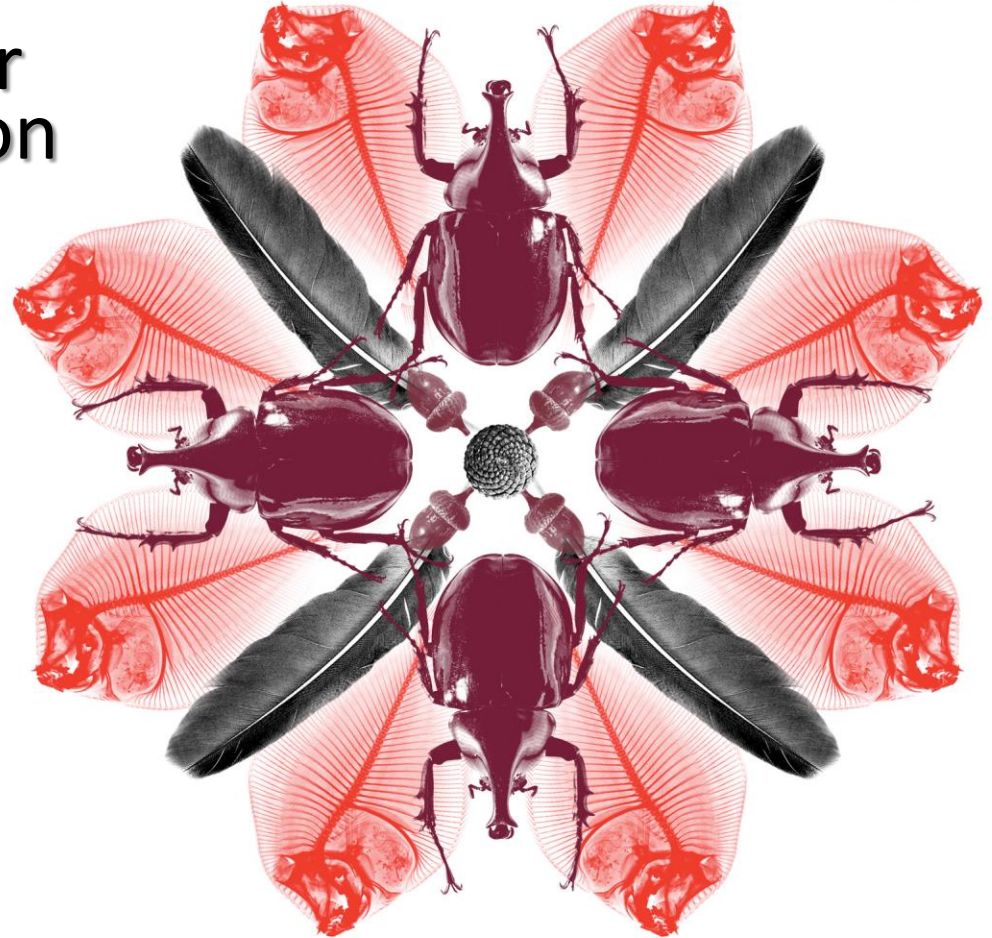




A Sustainable SALB Surveillance System Incorporating P-tracker Tools for Implementation by all APPPC rubber Growing Countries

SALB Workshop - Group One

- Sri Lanka
- Thailand
- Malaysia
- China
- Myanmar
- Indonesia
- Cambodia
- Laos
- Australia



Group One Presentation Background

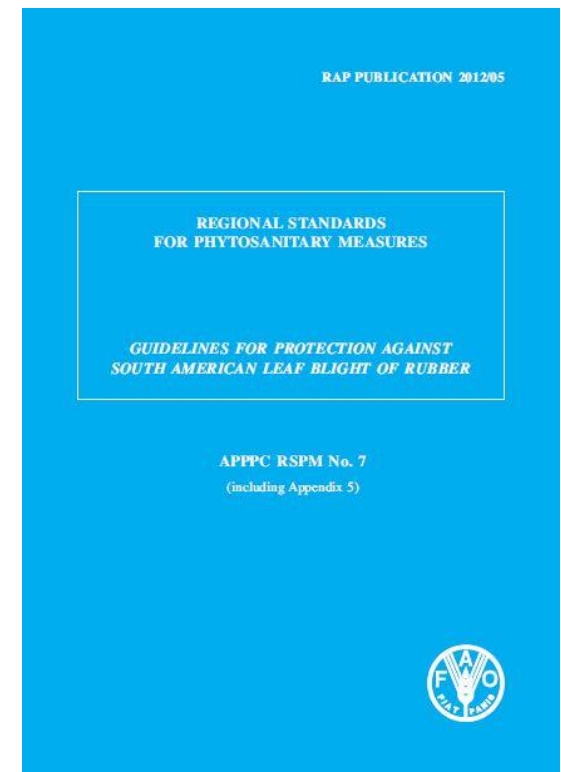


- The SALB surveillance system must be deliverable, practical, harmonized in such a way that it can be implemented
- The SALB surveillance system must not be based on the most developed and capable country, but on all countries and all levels of capability
- We must adopt a surveillance system that practically works
- The SALB surveillance system must be sustainable across the country and stakeholders (resourcing, infrastructure, management support)
- If there is an SALB incursion in region, there are considerable implications for all so resource and funding allocation needs to be representative of the economic and social impacts

1. Reasons for the Survey



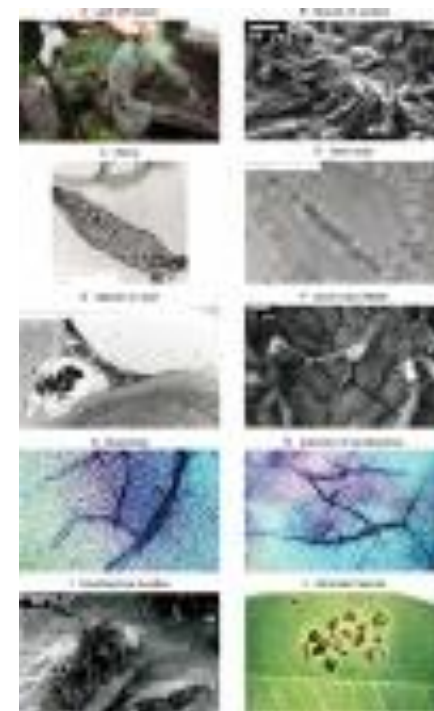
- Regional and National responsibility as the NPPO's and rubber research institutions to maintain plant health, particularly for detection surveillance and any changes to pest status
- To maintain scientific evidence to support a pest free areas (PFA) determination
- To maintain scientific records and evidence to support the application of phytosanitary measures
- To provide early detection of SALB diseases and to assist in the control and eradication activities in the event of an incursion



2. Identify and Understand Target Pest



- Conduct further research utilizing regional and south American reference to create regionally endorsed surveillance and diagnostic protocols, particularly in relation to;
 - young leaves
 - older leaves
 - fallen leaves
 - external symptoms
 - reproductive stages
 - Molecular based identification systems
 - Morphological based identification system.
- Coordinate surveillance and diagnostic photographs of the symptoms of all of the developmental stages and consolidate into a regional reference guide.
- P-tracker – development of a field identification reference guide and the development of a lab based identification reference guide (images and surveillance diagnostic instructions)



3. Identify and Understand Target Hosts



- Identify the four host *Havea* species;
 - *Havea brasiliensis* Muell. Arg. (commercial species)
 - *Havea benthamiana* Muell. Arg.
 - *Havea guianensis* Aubl.
 - *Havea spruceana* (Benth.) Muell. Arg.





4. Review of previous surveys and survey plans

- Thailand *general annual surveillance*
- China *annual surveys*
- Myanmar *monthly general surveys (all diseases)*
- Indonesia *general surveys*
- Cambodia *farmer based surveillance (information sent to NPPO)*
- Laos *no surveillance*
- Sri Lanka *general survey*
- Malaysia *general survey*
- *Note - no Vietnam, India or Philippines representation within Group One*

5. Surveillance System Planning

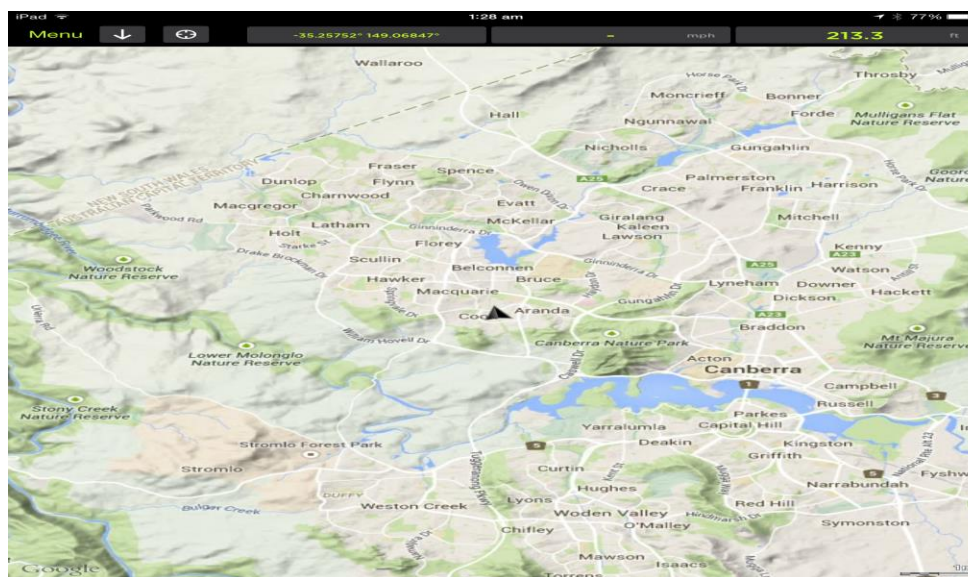


- Adopt a 'SIMS' (surveillance management information system) approach to surveillance activities to maintain data standards and consistency throughout the data collection, consolidation, verification, data management and reporting processes at a regional level.
- Adopt the use of P-tracker tools as the data collection, consolidation and management tools and a SIMS based system for the management, analysis and reporting of surveillance information.
- Encourage and promote a more systematic, harmonized approach to regional surveillance
- Encourage and maintain consultation with industry and stakeholders regarding commercial surveillance information

6. Record the area on climate, topography, location coordinates



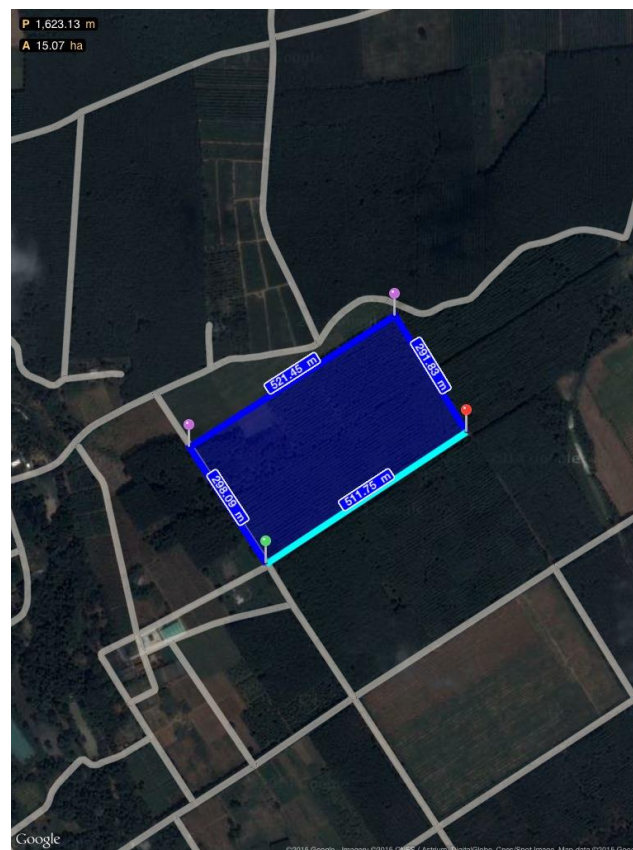
- Incorporate additional climate and season into the P-tracker sequence (additional data fields)
- Investigate iPad or android apps for climatic details – can be incorporated into the survey report at the data extraction point



7. Record the district – identify and provide coordinates or define



- P-tracker to provide spatial information by default
- Area calculations using P-tracker apps (area measurements, tracking apps)
- Use of Level One and Level Two for location levels
- Use of P-tracker and SIMS mapping tools for spatial reporting and analysis



8. Recording characteristics of the places, sites and sampling sites and how sites will be chosen

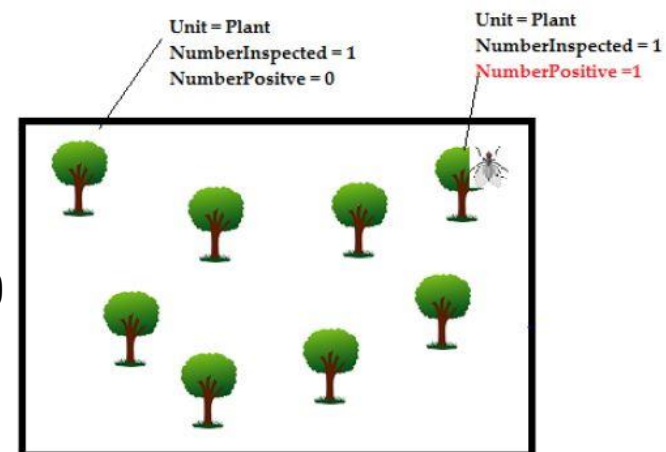


- Areas and districts of surveillance to be identified by agency responsible for plant health surveillance activities. Sites and areas may include;
 - points of entry (ports, airports)
 - rubber growing areas (targeted areas randomly)
 - high risk growing and risk pathway areas
 - main climatic growing areas
 - areas containing clones of high susceptibility
 - specific climatic areas susceptible to increased incursion and establishment
 - risk pathways and nearby production areas (regulated and natural such as land borders, extreme climatic events)

9. Sample Size



- Nursery plants – 100% inspection
- Mature forests - 10 plants per 100 – 10%
- RSPM 7 – one unit every 5 hectares (detection and delimiting surveys – interpreted to one hectare of inspection per 5 hectares of inspection or approximately 400 trees per 2000).
- Should be based on available resources
- Utilise P-tracker ‘planimeter’ application to map surveillance area to get total – divide into quadrants, use P-tracker for transects etc.
- Level of confidence needs to be 5%
- Sample size should be between 1 – 10% (for wider group discussion)





10. Determining the Timing

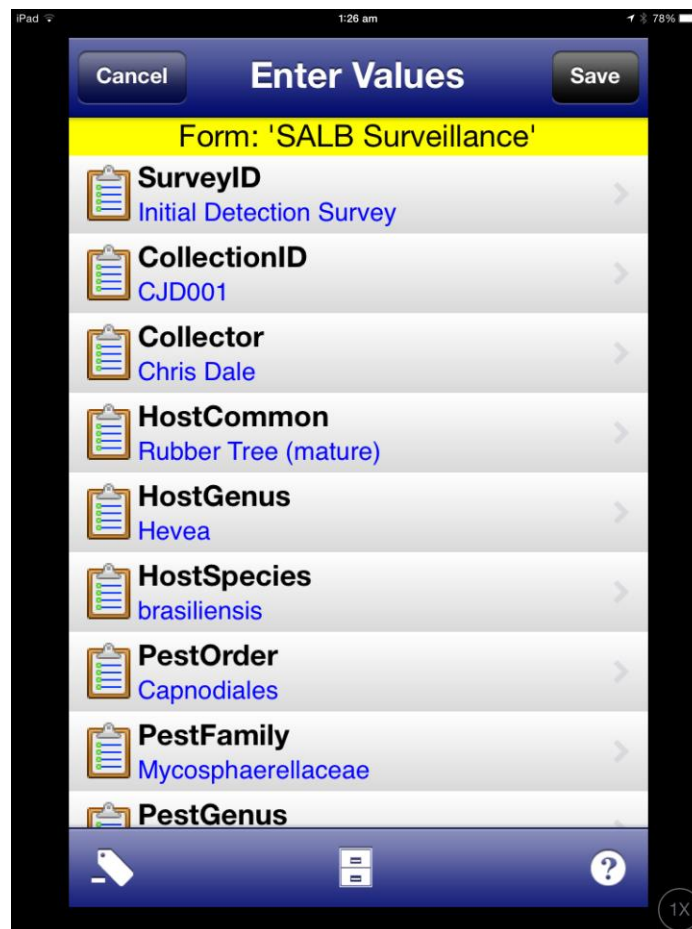
- Survey after the refoliation (generally during the dry season) during the disease peak
- Pathogen establishment is prioritised at time at refoliation



11. Data to Collect



- Development and agreement of a minimum data standard for SALB surveillance
- Include - Incidence / severity (leaf fall)



Form: 'SALB Surveillance'

Field	Value
SurveyID	Initial Detection Survey
CollectionID	CJD001
Collector	Chris Dale
HostCommon	Rubber Tree (mature)
HostGenus	Hevea
HostSpecies	brasiliensis
PestOrder	Capnodiales
PestFamily	Mycosphaerellaceae
PestGenus	

12. Collecting Methods



- Leaf inspections – leaves with suspicious symptoms (as per protocol)
- Potential drone capabilities
- Training monkeys for collecting leaf samples?





13. Data Management Approach

- Implementation of P-tracker for data collection and consolidation
- Implementation of a surveillance management system (SIMS)
- Regional collaboration, consistency and harmonization
- Common approach across the countries and stakeholders

South American Leaf Blight Surveillance Sequence (P-tracker) 2015

Field Name	Pre-populated Field Values								
SurveyID	<ul style="list-style-type: none"> Initial selection survey Monitoring survey Monitoring and Evaluation Survey Neighborhood Survey 								
CollectionID	- ID#								
CollectionDate	- Date								
HostCommon	<ul style="list-style-type: none"> Latex Tree (young) Latex Tree (mature) 								
HostGenus	- Name								
HostSpecies	- Species								
HostOrder	- Order								
HostFamily	- Family								
HostGenus	- Genus								
HostSpecies	- Species								
HostCommonName	- South American Leaf Blight (SALB)								
HostCategory	- Fungus								
Location_Country	<ul style="list-style-type: none"> Field of study Forest and post office Tourist routes Latex estate and plantations Latex research facilities 								
Location_County	- Name								
Latitude	- GPS coordinate								
Longitude	- GPS coordinate								
Collection	- Participant Details								
CollectionMethod	- Host Collection								
RecordType	<table> <tr> <td>Specimen</td><td>- A physical specimen has been collected</td></tr> <tr> <td>Observations present</td><td>- Visual inspection indicates the pest is present</td></tr> <tr> <td>Observations absent</td><td>- Visual inspection indicates the pest is absent</td></tr> </table>	Specimen	- A physical specimen has been collected	Observations present	- Visual inspection indicates the pest is present	Observations absent	- Visual inspection indicates the pest is absent		
Specimen	- A physical specimen has been collected								
Observations present	- Visual inspection indicates the pest is present								
Observations absent	- Visual inspection indicates the pest is absent								
DiagnosticResult	<table> <tr> <td>Positive</td><td>- positive diagnostic result for the pest (present)</td></tr> <tr> <td>Negative</td><td>- negative diagnostic result for the pest (absent)</td></tr> <tr> <td>Unknown</td><td>- unable to identify the pest</td></tr> <tr> <td>Pending</td><td>- the result of diagnosis are not yet confirmed, sample</td></tr> </table>	Positive	- positive diagnostic result for the pest (present)	Negative	- negative diagnostic result for the pest (absent)	Unknown	- unable to identify the pest	Pending	- the result of diagnosis are not yet confirmed, sample
Positive	- positive diagnostic result for the pest (present)								
Negative	- negative diagnostic result for the pest (absent)								
Unknown	- unable to identify the pest								
Pending	- the result of diagnosis are not yet confirmed, sample								
Unit	<ul style="list-style-type: none"> Individual Plants (Specimen) Stemless (Stemless plantings) Square Meter Trunk 								
NumberInspected	- ID#								
NumberInfected	- ID#								
IdentificationMethod	<ul style="list-style-type: none"> Visual inspection Isolation ITCA 								
IdentificationDate	- ID#								
Identification	- ID#								
Reference	- Reference reference								
Notes	<ul style="list-style-type: none"> Necessary inspection (all trees inspected, monthly during wet season) Stemless planting inspection (1 tree per 2 hectares) Refutation inspection (1-2 hectares, fortnightly inspection) Monitoring survey (selected area extending to 20m) 								



14. Personnel Involved – role and responsibilities

- NPPO's / Research Institutes / Primary Producers
- Survey coordinator
- Field / Technical officers
- Data management officers
- Regional coordinators, Regional representatives
- Senior Managers / CPPO's



15. Obtain permissions to visit sites and any permits required



NPPO to coordinate under the
Ministry of Agriculture,

- Plant Protection laws
- Biosecurity Acts
- Plant Quarantine Legislation
- Regulated / Evasive Pests Lists
- A1 and A2 prioritization for enforcement activities



Quarantine Act 1908

Act No. 3 of 1908 as amended

This compilation was prepared on 3 March 2010
taking into account amendments up to Act No. 8 of 2010

The text of any of those amendments not in force
on that date is appended in the Notes section

The operation of amendments that have been incorporated may be
that are set out in the Notes section

Prepared by the Office of Legislative Drafting and Publishing,
Attorney-General's Department, Canberra



16. Perform Pilot Survey

One country to deliver full surveillance system activity;

- Utilise a full P-tracker suite for data collection
- Utilise a full SIMS suite for data consolidation, management, analysis and reporting
- Provide feedback on survey delivery
- Provide feedback on diagnostics activities
- Provide feedback on post survey activities
- Provide feedback on data management and analysis
- Provide feedback on data reporting
- Provide formal feedback on the overall implementation of the surveillance system

17. Perform Full-Scale Survey



OK




18. Analysed Data



- Data analysis and forecasting, risk pathway assessments and analysis
- Who owns and manages the data
- NPPO responsibilities

Records

Search Search [Show All Records](#) [Export Search Results](#) [Return to main menu](#)

Pest	Location	Host Information	Collection and Diagnostic Information	Image
PestOrder: Capnodiales PestFamily: Mycosphaerellaceae PestGenus: Microcyclus PestSpecies: Microcyclus ulei PestCommonName: South American Leaf Blight (SALB)	Location_Level1: Rubber Research Institutes Location_Level2: Nurseries Lat: -35.257469 Lon: 149.068504	HostCommon: Rubber Tree (mature) HostGenus: Hevea HostSpecies: brasiliensis	RecordType: Observation: Absent SurveyID: Delimiting Survey CollectionID: CJD001 Collector: Chris Dale CollectionMethod: Hand Collection Unit: Individual Plant (nursery) Collection Date: 9/01/2015 NumberPositive: 0	 DiagnosticResult: Complete Identifier: Richard Davis IdentificationMethod: Isolation IdentificationDate: 9/01/2015 NumberInspected: 1 Notes: Nursery inspection (all trees inspected)

19. Report Results



Reporting information

- Confidentiality of information
- Commercially sensitive information
- Information will be varied for stakeholder groups
- Info for traveler
- Info for researcher
- Info for the international market
- Ownership of the data?
- National and Regional management of the data (who holds the data and associated accountabilities)

