Asia-Pacific
Economic Cooperation

APEC WORKSHOPS ON BUILDING BIOSECURITY PLANNING AND SURVEILLANCE CAPACITY FOR APEC MEMBER ECONOMIES

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LIST OF PAPERS AND PRESENTATIONS

A. BIOSECURITY PLANNING WORKSHOP

APEC Agricultural and Technical Cooperation Working Group

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Workshop Summary and Recommendations

The World Trade Organization, Biosecurity and Surveillance for Plant Pests

Graeme Evans[1]

INTRODUCTION

The term 'biosecurity' was brought into prominence with the introduction in New Zealand of the *Biosecurity Act* (1993) that sought to .... *restate and reform the law relating to the exclusion or eradication and effective management of pests and unwanted organisms.* The term 'biosecurity' is not defined in the legislation, but a definition has been proposed by Penman[2] as ....*effective management of risks by a system of coordinated pre-border, border management and sector responses aimed at preventing the establishment and spread of organisms that may have adverse effects on the economy, environment and people's health*.

While scientists and quarantine authorities have long recognised the risks of moving animals and plants into new environments, the last decade or so has witnessed heightened interest in the risks and the impacts that these may have on biodiversity and agriculture. This had led to the introduction of international instruments such as the Convention on Biodiversity and the Cartagena Protocol on Biosafety and programs such as the Global Invasive Species Initiative. However, more than any thing else, it was the establishment of the World Trade Organization (WTO) in 1995 that is driving international interest in biosecurity in order to provide competitive advantage to those countries trading in agricultural commodities. This paper examines the role of the WTO in revitalising interest in threats posed by exotic pests and diseases, the need for trading countries to understand the health (pest) status of their agricultural industries and natural ecosystems and the need for all countries to have the capacity to undertake surveillance for plant pests.

THE WORLD TRADE ORGANIZATION

Establishment of the WTO in 1995 was heralded as leading to a new era of trade liberalisation, including trade in agricultural commodities. The reason for this optimism was that the WTO is a rules-based organisation with the rules governing trade in agricultural commodities set out in the Agreement on the Application of Sanitary and Phytosanitary Measures[3] (the SPS Agreement). The SPS Agreement removes the rights of countries to exclude agricultural imports except on health and safety grounds. Countries seeking to use this provision of the Agreement are required to justify their actions on scientific grounds.

While international trade in agricultural commodities has increased since the WTO was established, it appears that developing countries have not benefited to the same

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[1] Formerly Principal research Scientist, Office of the Chief Plant Protection Officer, Australian Government Department of Agriculture, Fisheries and Forestry.

[2] Penman, D.R. (1998) Managing a Leaky Border: Towards a Biosecurity Strategy. Ministry of Research, Science, and Technology, Wellington New Zealand.

[3] SPS Measures are domestic regulations covering such matters as pesticide residues, heavy metals and microbial contaminants in food, and pests, weeds and pathogens that may be transported in agricultural commodities.

extent as developed countries[4]. The situation is attributed to the inability of the developing countries to meet the SPS requirements of the developed, high value markets, particularly in the west, that often remain closed on quarantine grounds.

Obligations on Exporters to Provide Data on Pest Status

The International Plant Protection Convention (IPPC) and the WTO SPS Agreement impose obligations for a prospective exporting country to provide the prospective importing country with a list of pests likely to be associated with the commodity to be exported. These include:

- IPPC obligations to provide official technical and biological information necessary for pest risk analysis in recognition of the essential nature of specific information on the pest status of a product that is held by exporting Members,[5] [6]
- Article 6.3 of the SPS Agreement which states that .... *exporting Members claiming that areas within their territories are pest- or disease-free areas or areas of low pest prevalence shall provide the necessary evidence thereof in order to objectively demonstrate to the importing Member that such areas are, and are likely to remain, pest- or disease-free areas or areas of low pest prevalence, respectively. For this purpose, reasonable access shall be given, upon request, to the importing Member for inspection, testing and other relevant procedures*.
- Annex B, paragraph 3(b) of the SPS Agreement which states that....*each Member shall ensure that one enquiry point exists which is responsible for the provision of answers to all reasonable questions from interested Members as well as for the provision of relevant documents regarding: (b) any control and inspection procedures, production and quarantine treatment, pesticide tolerance and food additive approval procedures, which are operated within its territory*.

In order to meet these obligations, and to be able to conduct pest risk analysis and establish phytosanitary regulations to prevent the entry, establishment or spread of a pest, countries need to maintain reliable pest records.

According to ISPM 8[7], ...*the provision of reliable pest records and the determination of pest status are vital components of a number of activities covered under the IPPC and by the principles noted in the ISPM No. 1: Principles of plant quarantine as related to international trade, and the international standards for phytosanitary measures that have been developed from them*.

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[4] See M. Ataman Aksoy, The Evolution of Agricultural Trade Flows. *In* M. Ataman and John C. Beghin, Global Agricultural Trade and Developing Countries. World Bank 2005.

[5] International Plant Protection Convention, 1997: Article VII: International cooperation: 1. "The contracting parties shall cooperate with one another to the fullest practicable extent in achieving the aims of this Convention, and shall in particular:…c) cooperate, to the extent practicable, in providing technical and biological information necessary for pest risk analysis."

[6] ISPM 11, Pest Risk Analysis for Quarantine Pests, 1.2 Information: "The provision of official information regarding pest status is an obligation under the IPPC (Art. VIII.1c) facilitated by official contact points (Art. VIII.2)."

[7] ISPM 8, Determination of Pest Status of an Area, IPPC, FAO, Nov 1998.

ISPM 8 states that:
All countries may use pest status information for:

- *PRA purposes;*
- *planning national, regional or international pest management programs;*
- *establishing national pest lists; and*
- *establishing and maintaining pest free areas*.

In order for countries to benefit from the spirit of trade liberalisation embodied in the agreement establishing the WTO, they must be able to comply with obligations imposed by the IPPC and the WTO under the SPS Agreement.

The problem for many developing and some other countries is that they cannot provide an adequate description of the health status of their agricultural industries, drawing on specimen-based collections ('biological collections') of plant pests.

PURPOSE AND FUNCTION OF BIOLOGICAL COLLECTIONS

Biological collections document the biodiversity of a country and hold important reference material for taxonomists. Pest collections and associated data also have other uses, such as:

- Providing information on the health (pest) status of a country's agricultural crop and forest industries;
- Supporting the development of pest management strategies (including integrated pest management) at the regional and farm level;
- Providing the basis for domestic and international quarantine policies and actions;
- Providing a reference point for determining whether 'new' pest records are endemic species or whether these represent new pest incursions; and
- Underpinning trade by providing data and reference specimens for quarantine agencies needing to conduct pest risk analysis in support of negotiations to access foreign markets.

Well- populated pest collections will contain multiple entries of the same pest from different hosts and from across different production and geographic areas. The data contained in these collections will allow plant health authorities to map the distribution of pests across a country and provide information on seasonal occurrence of pests and prevalence of pests in particular areas and on particular crops. Such information is of great value when countries are negotiating access to markets for agricultural commodities.

In the context of international trade, pest **records** based on voucher specimens that are held in properly curated collections provide the most reliable evidence of the plant health status of the country. This is because specimens can be re-examined to confirm or refute the identity of the specimen or to obtain more precise data on the circumstances under which the specimens were collected and on their distribution. On the other hand, published **reports** of plant pests that are not supported by voucher specimens cannot be validated and are a potential impediment to agricultural trade. Erroneous reports can be extremely difficult, time consuming and expensive to

disprove to the satisfaction of a prospective trading partner. Specimen-based records and other material contained in biological collections provide a country with a powerful tool to assist bids for market access and to justify measures to exclude potentially harmful exotic pests.

A country that cannot provide an adequate description of the health (pest) status of its agricultural industries is at a disadvantage when negotiating access to foreign markets. Prospective importers will assess risk based on their knowledge of the pests in the country seeking to export, the likelihood of introducing exotic pests of concern with the imported commodity and the availability of phytosanitary measures to reduce risk to an acceptable level. Extensive specimen-based pest records held in biological collections are the key for developing countries to negotiate with developed countries on a level playing field.

Populating Biological Collections

Many of the better populated collections of arthropod pests and plant diseases around the world are the products of work dating back a century or more. The early curators of these collections sourced specimens from practicing plant health scientists, farmers and from their own collecting trips. While specimens submitted by plant health scientists and farmers are still valuable, the collection of specimens has become more purposeful than in the past, driven by the need to expand scientific knowledge about biodiversity, concern about the need to recognise alien pests in new environments and a desire to expand trade in agricultural commodities.

Countries wanting to expand exports of agricultural commodities under the rules of the WTO do not have the luxury of building their pest collections over an extended period of time. Nor do they have to. The development of specimen-based pest lists can be accelerated through structured surveillance programs, focusing on the pests that might be carried on the commodity to be exported. Often the trading partner will specify the extent of the surveillance activities to be undertaken, but not always.

CONCLUSION

Governments everywhere are under pressure from their constituents to use the provision of the SPS Agreement to maximum competitive advantage – that is to prise open markets previously closed on questionable quarantine grounds and to exclude commodities that pose a risk to domestic markets, including the risk of introducing exotic pests. For developing country members of the WTO, building robust, specimen-based pest lists offers the best approach to trading on a level playing field with the developed country members. While the needs of the developing member countries will vary, it is difficult to envisage a more useful approach than to provide assistance that builds competency in five key areas, as follow:

- Surveillance for plant pests;
- Diagnostic capacity;
- Specimen preservation;
- Collection Management; and
- Data management.

BIOSECURITY PLANNING CAPACITY OF PARTICIPATING APEC ECONOMIES

CAB International

Pre-Workshop questionnaire survey:

- **Biosecurity planning capacity**
- **Surveillance capacity**
- **Responses from 10 economies**

CAB International

Phytosanitary Legislation / Institutional Responsibilities

- All except one economy have NPPO setup
- NPPOs all have standard responsibilities such as issuance of phytocertificates, inspection of consignments, conduct PRA, etc
- NPPO with phytosanitary-implementing agency (9/1)

CAB International

NPPO has authority to –

→Impose penalties for breach of regulations

→Control import, export, movement within country

→Conduct isolation, examination & testing on private property (9/1)

CAB International

Legislation:

- **enforcement provisions for reporting suspected new pests (6/4)**
- **control of importation of new plant species (9/1)**
- **control of importation of GMOs (7/3)**
- **funding for emergency action (6/4)**
- **mechanism for obtaining emergency funds (5/5)**
- **compensation for farmers (4/6)**

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CAB International

Emergency Response Plans:

- Most economies have ERPs (7/2)

- Most are pest-specific ERPs

- Australia has “industry biosecurity plans” for a range of industries

CAB International

PRA Capabilities:

- Requirement for technical justification (8/2)
- National PRA standard/guidelines (8/1)
- National coordinator for PRA (9/1)
- Pest categorization (8/0)
- Probability of pest introduction (8/0)
- Economic impact assessment (7/1)
- Develop technically-justifiable risk management options (7/1)

CAB International

PRA Capabilities:

- Storage and retrieval system for PRAs (6/3)
- Host-based pest lists
- Can be verified by collections (8/1)

CAB International

Expertise to determine:

- pest category (10/0)
- potential for entry, establishment & spread (9/1)
- pest economic impact (10/0)
- multiple pathways (9/1)

NPPO has:

- expertise to assess probability of spread (6/4)
- need for expertise in biostatistics (4)
- economic impact assessment expertise (3/6)
- economic data on crop production, pest control costs (7/3)
- expertise to evaluate risk management measures (6/4)

CAB International

Other responses:

- **National guidelines/standards for pest eradication, generally for pests for which ERPs available**
- **Personnel for pest eradication generally in place**
- **Inspection and prevention in place**

CAB International

Conclusions ?

- Except for the more developed economies, emergency response plans available for selected known quarantine pests only
- Holistic approach to biosecurity planning not established
- National legislation to support this approach not in place as yet
- Capacity-building needed in many elements of biosecurity planning, e.g. identifying and evaluating threats, assessment of economic impact, etc
- Information sharing on potential threats/invasives?

CAB International

Biosecurity Capacity Needs Assessment Tool

APEC, Kuala Lumpur
Mike Robson
August 2005

Outline

- Definitions
- FAO work on *Biosecurity*
- FAO *Biosecurity* Capacity Needs Assessment
- Outline of Assessment
- Stage 2: Review existing *Biosecurity* performance
  - *Biosecurity* system performance
  - organisations (agencies) addressing *Biosecurity* issues
- Summary of tool, by stage
- Status of tool

Definition(s)

Biosecurity is

> "a strategic and integrated approach that encompasses the policy and regulatory frameworks to analyse and manage risks in animal and plant life and health, food safety and biosafety."

FAO Technical Consultation, 2003

...it covers both intentional ("bioterrorism") and non-intentional contamination

why is Biosecurity *important?*

The risks to be managed may include:

- **Invasive species** *(deliberate or accidental introductions)*
- **Food chain problems** *(feed safety, zoonotic disease, pesticides, mycotoxins...)*
- ***Transboundary animal diseases, plant pests,*** *etc....*

and have a major impact on trade/ market access under the SPS agreement

FAO work on *Biosecurity*

- Interdisciplinary group (2001)
- Technical consultation (Bangkok, 2003)
- Concept paper on Biosecurity to governing body (March 2003)

Outputs

- methodologies (Risk analysis manual, capacity assessment tool)
- information exchange (www.ipfsaph.org)
- projects to create/enhance legislation
- work on biosafety in the biosecurity framework

.....

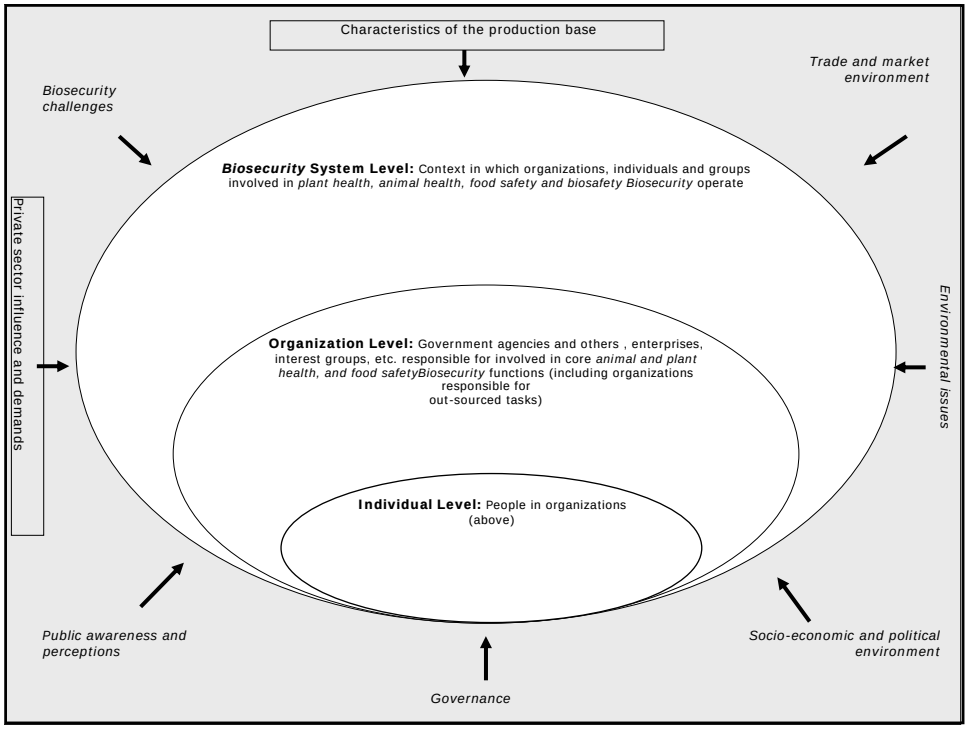
FAO Biosecurity *Capacity Assessment tool*

Intended to help *Biosecurity*-related planning

Sector-specific assessment tools can only go so far...

- PCE (FAO)
- PVS (OIE/IICA)
- Guidelines for assessment of capacity building needs in official food control systems (FAO)

Impact of *Biosecurity* **across government agencies**



Outline of assessment

Examining the present capacity and performance of *Biosecurity* in the country

Stage 1. Getting started (preparatory steps) Ensure high-level support for the *Biosecurity* capacity needs assessment ; Identify roles of key government agencies in assessment process; Agree on scope of the *Biosecurity* capacity needs assessment and process to be followed

Stage 2. Review and analysis of existing *Biosecurity* capacity and performance Identify and analyse *Biosecurity* challenges; Identify who is involved in managing *Biosecurity;* Assess existing *Biosecurity* capacity and performance

Defining and moving towards the desired future

Stage 3. Develop a shared vision of the desired future *Biosecurity* outcomes Define desired future situation of *Biosecurity*

Stage 4. Identification of *Biosecurity* capacity building needs and options to address them Identify capacity needs to reach desired future outcomes; Review options to address identified capacity building needs; Develop capacity building action plan for *Biosecurity*

Biosecurity Capacity Needs Assessment Tool

Stage 2: Review existing *Biosecurity* performance - example

- what are the *Biosecurity* **challenges** faced by the country? *[List]*
- **who** is involved? *[List]*
- how well do the current *Biosecurity* (i) **system** and (ii) **organisations (agencies)** respond to these challenges?

(i) *Biosecurity* system performance

The system can be assessed in terms of:

- policy
- legal frameworks
- coordination
- communication

policy questions

- what policies are in place?
- are they implemented in practice?
- how are policies reviewed?

...

legal questions

- what regulations exist relevant to *Biosecurity*?
- are there any gaps in *Biosecurity* regulations?
- are regulations implemented (consistently)?

coordination questions

- which agencies, what roles
- how are resources allocated to *Biosecurity?*
- public vs private involvement in delivering *Biosecurity* functions
- institutional models (devolved vs centralised)

communication questions

- how is consultation within government handled?
- how is communication with external stakeholders arranged?

(ii) Organisations (agencies) addressing *Biosecurity* issues

Agriculture, Forestry, Fisheries...

- formulation of legislation and policies related to *Biosecurity*
- development of sector including agri-food exports
- risk analysis, inspection, diagnosis, surveillance
- participation in international organisations, bodies, codes of conduct

Environment

- formulation of environmental legislation, policies related to *Biosecurity*
- inspection, quarantine, diagnosis, surveillance
- participation in international bodies and agreements

also Health, Trade/Commerce, Science & Technology, Foreign Affairs...

...contribution to *Biosecurity*

in terms of effective delivery of core functions:

- scientific research and advice
- inspection
- enforcement
- post entry quarantine
- surveillance and monitoring
- information and communication
- contingency planning and emergency preparedness

Summary of tool, by stage

1: participative, preparing and setting scope

2: data gathering, analysis

3: participative, develop vision based on scope and analysis

4: participative, establish gaps and plans for addressing

Status (August 2005)

The Biosecurity Capacity Needs Assessment tool has been peer-reviewed and is currently being tested.

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Biosecurity Capacity Needs
Assessment Tool

APEC-TILF Workshop Introduction

- About APEC ATCWG
- The Project
  - Background information
  - Objectives of the Project
  - Implementation of the Project
  - Expected outputs
  - Benefits of the Project to APEC

About APEC ATCWG

- Established in 1996 as Agricultural Technical Cooperation Experts' Group
- Now called ATC Working Group
- Initial program focused on cooperative activities to enhance agriculture's contribution to region's economic growth and social well-being
- ATCWG meetings attended by both public/private sector representatives of Member Economies
- Now has 7 Priority Areas of work

ATCWG Priority Areas

- Conservation and Utilisation of Plant & Animal Genetic Resources
- Research, Development and Extension of Agricultural Biotechnology
- Production, Processing, Marketing, Distribution and Consumption of Agricultural Products
- Plant & Animal Quarantine and Pest Management
- Cooperative Development of an Agricultural Finance System
- Agricultural Technology Transfer and Training
- Sustainable Agriculture and Related Environmental Issues

Background Info on Project

- APEC Member Economies agreed to strengthen biosecurity planning and surveillance capacity in Agriculture Sector at ATCWG Session, Chiang Mai, 2004
- MEs endorsed the Project proposed by Malaysia and co-proposed by Australia, Brunei Darussalam, P. R. China, Indonesia, Papua New Guinea, Thailand, USA
- Project is part of a series of capacity building initiatives to help farmers protect crops and livestock against invasive pests and diseases
- Project builds on several related activities delivered under the aegis of ATCWG-PAQPM sub-group

Objectives of Project

- Create awareness and capacity to design surveillance programs for building information on plant health status and early detection of serious pests and diseases
- Build APEC understanding of and share information on need to engage in biosecurity planning to contain transboundary movement of pests and to mitigate damage & losses caused by such invasives
- Build capacity to respond to exotic pests to reduce economic impacts
- Strengthen capacity to implement SPS measures in compliance to requirements of WTO-SPS Agreement

Implementation of Project

- A pre-workshop, focused survey
- Two back-to-back workshops in KL
- Workshop programs comprising presentations, group discussions, exercises, member economy presentations (various issues and case studies), networking sessions and recommendation adoption
- Proceedings in CDs in 5 languages

Expected Outputs

- A manual on surveying for plant pests endorsed and adopted by APEC MEs
- An awareness among APEC MEs of components of and processes involved in developing industry biosecurity plans
- An awareness of opportunities that biosecurity planning provides for surveillance programs and pre-emptive R & D programs to mitigate the impact of new pest incursions

Benefits of Project to APEC

- Facilitating secure and efficient movement of goods – supporting an APEC goal
- Reducing non-tariff TBs and ensuring transparency of APEC MEs' respective non-tariff measures through better understanding of Plant Health status of MEs
- Promoting good regulatory practice for preparation, adoption and application of technical regulations in APEC
- Providing a collegiate approach to reducing barriers to trade
- Supporting the 3 pillars of APEC's activities through well-planned biosecurity strategies
- Achieving free and open trade

GROUP 1

Elements of Biosecurity

A. What is Biosecurity?

A concept, process or method to manage all biological risk which could affect environment, food and agriculture including human health.

B. Objectives of Biosecurity System/purpose

a. To prevent the introduction, establishment , spread of exotic pests
b. To protect economy, environment, and human health
c. To have standard method to control/manage of exotic pest/invasive alien species (IAS)
d. To facilitate trade
e. To ensure existing ecology of animal and plant maintained
f. To prevent the spread of pests already existing in the country

C. Elements of biosecurity

Three elements to be considered:
a. Pre-border
b. Border
c. Post-border

D. Pre-border

a. Identify biosecurity threats by exotic pests
   -commodity
   -pest records
   -industry experience
b. complete information on the pest.
c. manage risk off-shore through
   -accreditation
   -pre-clearance
   -standard for the products
d. Awareness/training/capacity building
   -funding

E. **Border**

a. Legal framework
b. Inspection standards for
   -implementation of quarantine measures

-risk mitigation measures

c. Surveillance/trapping system

d. Upgrading capacity for

-reporting (IT)

-appropriate infrastructures

e. Funding

E. Post-border

a. Legal framework
b. Early/timely detection
-surveillance of quarantine pests
/target pests
c. Emergency response plan
d. Funding, manpower, logistic, etc.
e. System review

GROUP 11

Definition of Biosecurity – accepted /agreed although this is not the only definition but more of this ;encompassing

Elements of Biosecurity

Pre-border Preparedness

1. **Knowledge of industry status**
2. **identifying exotic pest threats**
3. **Datasheets for targeted psts**
4. **managing quarantine risks offshore**
5. **Identifying and undertaking offshore R & D where pests are endemic**
6. **surveillance**
7. **7. diagnostic capacity**
8. **identified pathway instead of agreed host list**
9. **awareness and training/capacity building**
10. **agreed position on funding for eradication**
11. **analysis of legislative framework**

Emergency Response Plan instead of Pre-border Response Planning

All are equally important but the ranking or sequence are:

1. **procedures for initial response alert**
2. **communication strategy**
3. **management and coordination including roles and responsibilities**
4. **control strategies**
5. **procedures for maintaining market access**
6. **criteria for recommending eradication**
7. **cost-benefit analysis**
8. **protocols for surveying samplinf trace-backs**

Border

- Implementing effective quarantine for people, animals, plants and goods
- establishing trapping and surveillance networks for pests that may bypass checkpoints

Post –border

- Minimizing risk of regional and property entry and establishment
- Preparing for timely detection, minimised spread and rapid response to emergency pests

Discussion Areas:

How should pre-border, border and post-border components b balanced?
-pre-boder is the most important

Detection, Monitoring and Management of Plant Pests in Japan

Takayasu Watanabe
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1. Background

The Plant Protection Service of Japan implements, under the Plant Protection Law(hereinafter referred to as "Law"), import quarantine to protect Japanese agriculture from invasion of quarantine pest from abroad, domestic quarantine to prevent the propagation and spread of local pests which seriously threatens agricultural crops, and export quarantine to meet the requirements from importing countries.

2. Monitoring survey

There are two types of monitoring survey. One is for invasive pests, and the other is for domestic important pests.

3. Monitoring survey for invasive pests

The Plant Protection Division of MAFF plays the most important role as headquarters of all agencies and organizations involved in these monitoring activities. There are the Plant Protection Stations and the Plant Protection Centers for this purpose; the former is under national government and the latter is under prefectural governments.

4. Plant Protection Station responsibilities

The Plant Protection Station has a responsibility for the international plant quarantines and domestic plant quarantine. Domestic plant quarantine includes monitoring survey for invasive pests, emergency control, and eradication programs on designated pests.

5. The target species

Japan has decided important pests as target species for the monitoring survey (Med fly, Oriental fruit fly, Melon fly, *Anastrepha* spp., *Rhagloletis* spp., Codling moth, Sweet potato weevil, *Erwinia amylovora*, and *Acidovorax avenae* subsp.*citrulli*, etc.).

6. The monitoring network at point of entry in Japan

The monitoring survey is carried out by national government at seaports and airports throughout Japan. There are 75 places where the monitoring surveys are carried out.

7. Med fly traps at production area

At production and growing sites, the surveys are carried out by prefectural governments. There are 542 traps for Med fly, 985 traps for Oriental fruit fly, Melon fly and Queensland fruit fly throughout Japan.

8. Outbreak

The incursion of Oriental fruit fly was detected in Okinawa as a result of this survey. And Sweet potato weevil was detected in Kagoshima and Kochi , and West Indian sweet potato weevil was detected in Kagoshima.

9. Emergency control

Emergency control is the measure regulated by Law aimed at eradication of pest. When the emergency control is implemented, the region and the pest under the emergency control are designated. In such a case, any movement of host plants of the subject pest is prohibited, the cultivation of host plants in the identified region is prohibited, and the cultivated plants are disposed. In addition, depending on the target pests, appropriate control measures are conducted.

10. The monitoring survey for domestic important pests

For domestic important pests, the pest forecast program is conducted by the Plant Protection Centers affiliated with prefectural governments.

11. The target pests of the pest forecast program

The target pests of the pest forecast program are designated by the national government. These pests widespread throughout Japan cause a great damage to agricultural crops.

12. The pest forecast system

The pest forecast reports including regional information are made by the Plant Protection Center of each prefecture. The Plant Protection Center surveys the occurrence of pests at each crop, collects the data, analyzes the factor the concerning the occurrence of pests, investigate the damages, and forecast the pest prevalence with simulation models using the statistical and experimental techniques.

13. The network system concerned with the pest forecast system

The Plant Protection Division of MAFF plays a central role in organizing the network system, including instruction, report of survey and circulation of information. The collected information is provided to related parties through website and fax transmission system.

Main Topics:

A. National Organizations for Agricultural Biosecurity

B. Current Status of Invasive Alien Species

C. Management of Invasive Alien Species

National Organizations for Agricultural Biosecurity

State Organizations

- **Ministry of Agriculture (MOA)**
- **State Forest Administration (SFA)**
- **State Environmental Protection Administration (SEPA)**
- **General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)**

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

- Plant Quarantine Division
- Animal Quarantine Division
- GMO Biosecurity Division
- Alien Species Management Division

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

- Plant Quarantine Division

Mission:

- Department of Crop Management
- Making and implementing the law,regulation and technical standards about plant quarantine
- Undertaking IPPC affair
- Concluding the bilateral plant quarantine agreement
- Issuing and lifting the ban of plant importing

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

- Plant Quarantine Division

National of Agro-Technical Extension & Service Center

Mission:

- Quarantine permission of the importing crop seed and seedling
- Pest risk analysis for the importing crop seed and seedling
- Control and eradication of crop quarantine pest
- Surveillance of crop quarantine pest

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

- Animal Quarantine Division

Quarantine Supervision Division in Department of Veterinary

Mission:

- Making and implementing the law,regulation and technical standards about animal quarantine;
- Concluding the bilateral plant quarantine agreement
- Undertaking OIE affairs
- Issuing and lifting the ban of animal importing
- Managing the national animal quarantine and disease control and eradication

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

GMO Biosecurity

National GMO Biosecurity Management Standardization Committee

Mission:

Drawing and mending the standards of GMO studies, test, produce, process, trade, import, export and biosecurity management

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

→ **GMO Agricultural Biosecurity Committee**

GMO Biosecurity Management Office

Missions:

- Making the rules of GMO techniques and biosecurity management
- Supervision of national GMO biosecurity
- Permission of GMO production importing
- Evaluating and testing the safety of GMO

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

→ **Management for Invasive Alien Species**

Ministry of Agriculture (MOA) is assigned to be in charge of the leadership and coordination among different ministries and bureaus by the State Department in 2003.

→ **Administrative Office for Alien Species**

→ **Center for Management of Invasive Alien Species**

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

→ **Administrative Office for Alien Species**

Mission:

- To establish a transparent mechanism for dealing IAS problem among different ministries and departments
- To coordinate IAS actions with SFA, SEPA, AQSIQ , SMA, MFTEC…
- To work out national strategy and plan for P & M of IAS
- To establish a transparent mechanism for dealing IAS problem among different ministries and departments
- To coordinate IAS actions with SFA, SEPA, AQSIQ, SMA, MFTEC …
- To work out national strategy and plan for P & M of IAS

National Organizations for Agricultural Biosecurity

Ministry of Agriculture (MOA)

→  Center for Management of Invasive Alien Species Ministry of Agriculture (CMIAS, MOA)

Mission:

- To establish a national IAS database, to develop risk assessment mechanisms, early detection and monitoring methods and methods and early-warning system
- To develop rapid response procedures
- To develop / improve efficacy of biological, chemical & physical control, eco-manipulation, and integrated management techniques
- To assess economic impacts of IAS on different eco-systems
- To develop international cooperation projects

National Organizations for Agricultural Biosecurity

State Forestry Administration (SFA)

Missions:

- National forestry plant quarantine management
- Quarantine permission of forestry plant seed and seedling importing
- Pest risk analysis for the importing forestry plant seed and seedling
- Control and eradication of forestry plant quarantine pest
- Surveillance of forestry plant quarantine pest

National Organizations for Agricultural Biosecurity

General Administration of quality Supervision, Inspection and Quarantine (AQSIQ)

Mission:

Inspecting and treating the imported animal, plant and their production at port

National Organizations for Agricultural Biosecurity

State Environmental Protection Administration (SEPA)

National Biosafety Management Office

Mission:

- Managing the environmental safety of the bio-techniques
- National liaison to ICCP

B. Current Status of IAS in China

Current Status of IAS in China

1. There are more than 400 alien species invaded into China. This is our uncompleted records. Most of them are dangerous, noxious and harmful weeds, insects, plant and animal diseases in agriculture, forestry, marine, freshwater, wetland, grassland, and natural conservation ecosystems.

Current Status of IAS in China

2. Fifty of the 100 World's Worst Invasive Alien Species listed by IUCN occur in China

Category	in the World	in China
Micro-organism	8	1
Aquatic plant	4	3
Land plant	32	19
Aquatic invertebrate	8	2
Land invertebrate	18	6
Amphibian	3	1
Fish	8	6
Bird	3	3
Reptile	2	0
Mammal	14	9
Total	100	50

Current Status of IAS in China

3. Damages and Losses:

The economical and ecological impacts of alien dangerous invasive species are extremely great. The invasion has lessened the output and quality of agriculture, forestry, animal husbandry and fishery, increased greatly the control expense, caused the decrease of biodiversity and disappearance of native species, and has posed a threat to natural genetic resources.

An estimated economic losses for 11 invaded agricultural and forestry pests showed that the losses reached more than 57 billion Yuan annually.

C. Current Framework and Actions in China

Current Framework and Actions

1. Recent Actions in MOA

- Preparing a 10-year work plan to identify specific initiatives with different governmental ministries;
- Establishing a national IAS risk assessment committee;
- Conducting an evaluation of current legal and regulatory authorities relevant to invasive species;
- Conducting IAS risk assessment criteria and procedure;
- Initiating a national-wide integrated control project on different eco-systems.

Current Framework and Actions

2. Recent Actions in MOA

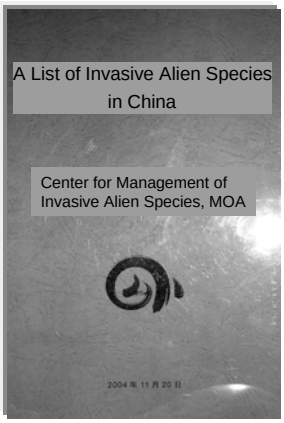
APEC Invasive Alien Species (IAS) Workshop
(Sept. 2005, Beijing)
Sponsored by
Chinese Ministry of Agriculture (MOA)
U.S. State Department

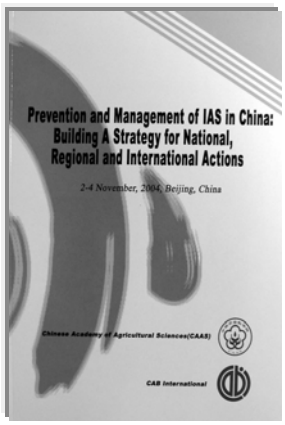
Objectives:

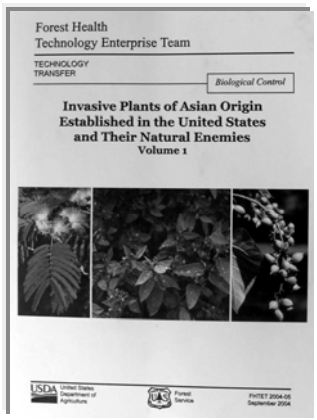
- Develop an APEC strategy that cuts across all relevant APEC fora to address IAS within the context of trade;
- Build upon or develop an action plan for each of the relevant working groups or fora, as well as a mechanism for communicating best practices among them.

Current Framework and Actions

3. Recent Actions in CMIAS







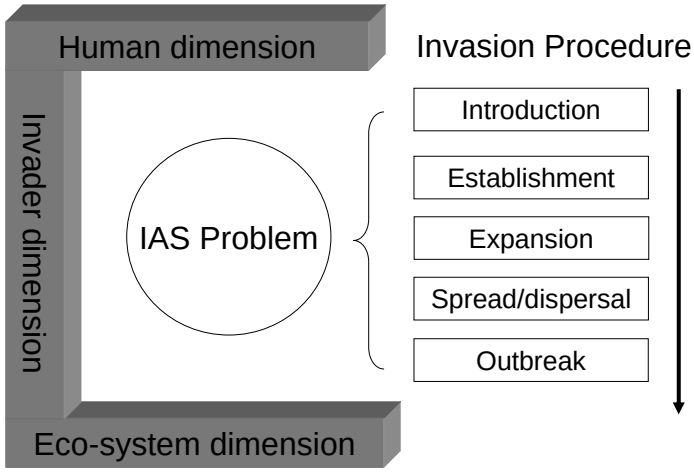
Current Framework and Actions

3. Recent Actions in CMIAS

D. National Strategy Framework

National Strategy Framework

1. Three Dimensions for Addressing IAS Problem



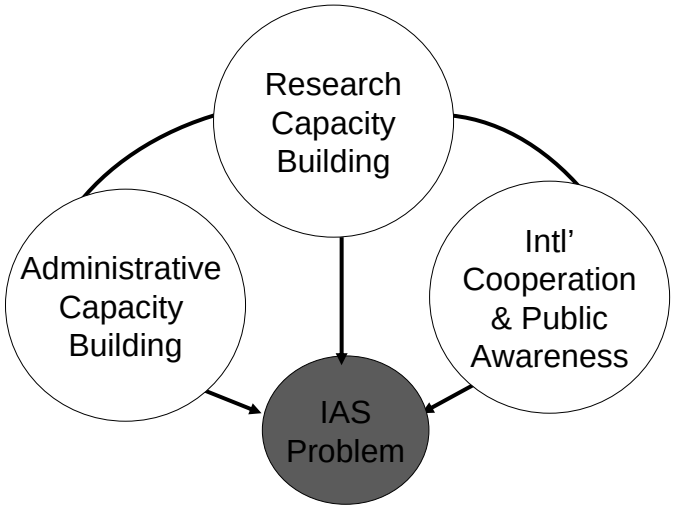
National Strategy Framework

2. Roles for IAS Prevention and Management

Role 1:	Prevention (Border control)
Role 2:	Risk analysis
Role 3:	Detection
Role 4:	Monitoring
Role 5:	Eradication / elimination
Role 6:	Mitigation
Role 7:	Suppression
Role 8:	Control
Role 9:	Restoration
Role 10:	Transparent administrative mechanism
Role 11:	Basic and applied research
Role 12:	Public education
Role 13:	Intl' cooperation

National Strategy Framework

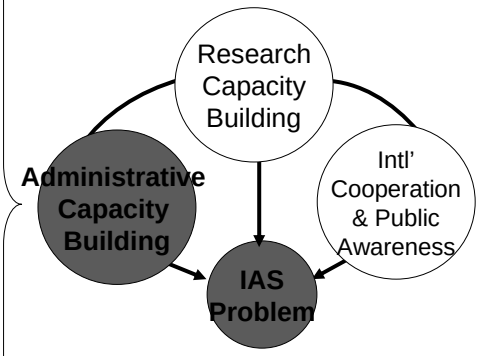
3. Three Categories for Constructing the Strategy



National Strategy Framework

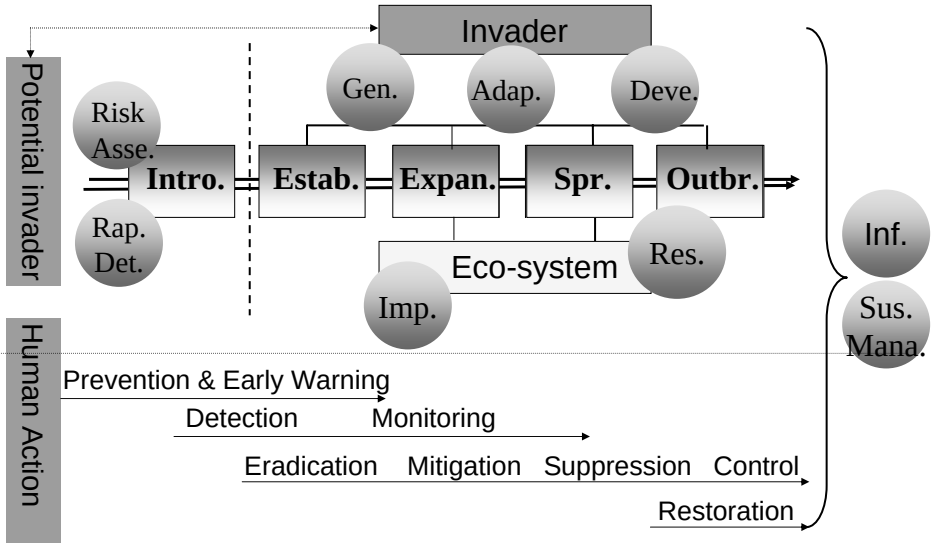
3-1. Administrative Capacity Building for Constructing A Strategy

- Policy and legislation
- Leadership and coordination mechanism
- Sectors' duty and responsibility
- Black-list & Border control
- Early warning system
- Rapid response mechanism
- Information sharing
- National IAS committee & working groups
- National plan & priority action



National Strategy Framework

3-2. Research Capacity Building for Constructing A Strategy



National Strategy Framework

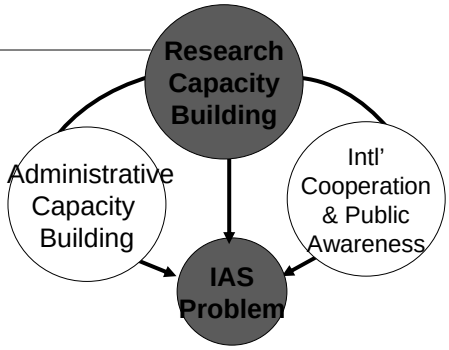
3-2. Research Capacity Building for Constructing A Strategy

Quantitative risk assessment techniques on intentional & unintentional introduction, invaded IAS, & potential invaders:
GIS, Web-GIS techniques…

Rapid detection tech: Molecular

Field monitoring tech:
GIS, RS, Radar

Emergency treatment tech:
Goods, isolated nursery for quarantine & field



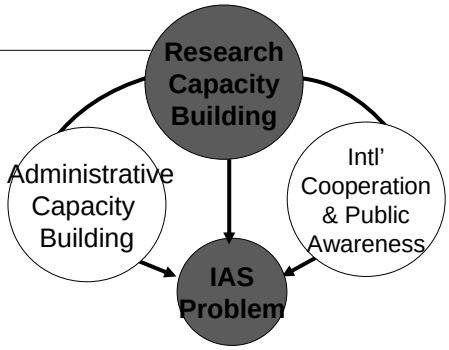
National Strategy Framework

3-2. Research Capacity Building for Constructing A Strategy

Control tech: eradication, bio-control, eco-manipulation, cultural, physical, chemical control, TPM, IPM

Recovery and restoration tech: in invaded eco-systems

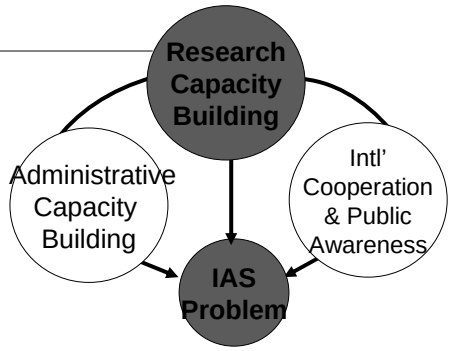
Ecological & economic impact evaluation tech: Biodiversity, native genetic resources, agriculture, forestry, livestock, fishery, marine production…



National Strategy Framework

3-2. Research Capacity Building for Constructing A Strategy

- Understanding relationships among environment-host-invader
- Improving tech. for: taxonomy, Analyzing geographic limits for IAS distribution
- Understanding ecosystem service function against invasion
- IAS Pathway identification
- IAS Hazard identification



National Strategy Framework

3-3. Intl' Coop. & Public Awareness for Constructing A Strategy

- To cooperate and harmonize Intl' agreements related to IAS (such as CBD, IPPC…)
- To develop linkages and cooperation on same interests among institutes dealing with IAS
- To develop regional strategies for adjacent countries, bi-lateral & multi-lateral cooperation, and seek donor agency support
- Public education via various media, plans for public campaign,

For More Information and Further Cooperation, Please Contact:

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Thanks for your attentions!

Workshop on Building Biosecurity Planning and Surveillance Capacity for APEC Member Economies

15- 20 August , 2005. Kuala Lumpur, Malaysia.

Singapore Country Report on Bio-Security Planning

Overview of Country Report

- What is biosecurity ?
- Plant Biosecurity Strategy
  - ❖Pre-Border
  - ❖Border
  - ❖Post Border Surveillance
- Preparedness

What is Biosecurity

"Biosecurity is the protection of the economy, environment and human health from negative impacts associated with agricultural, aquatic and environmental pests and diseases."

…. *Gardner Murray*

Plant BioSecurity Plan

- **Plant Biosecurity - Strategy**
  - Pre-Border
  - Border
  - Post-Border

Pre-Border BioSecurity

- Identify of the highest priority biosecurity (pest/disease) threats to the country;
  - Pest risk assessment
    - past records, literature & industry experience
    - economic & environmental concerns
- Managing phytosanitary risks offshore
  - Accreditation – bilateral arrangements
  - Import Requirements

Border Biosecurity

- Inspection at Entry Points- Improved threat identification;
- Effective Communication with Border agencies- Entry of invasives minimised;
- Pest interception surveillance
- Risk mitigation measures
  - Disinfestation measures
  - Reexport
  - Destruction

Post-Border Biosecurity

- Establish surveillance network for early detection
  - General, exotic & target
- Contingency Plan for RNQP
- Emergency response plan for QP

Preparedness

- Organization of Inter-Agency Biosecurity Working Committees
  - Emergency Command Committee
  - Emergency Action Pest Groups
  - SOPs
- Enhancing detection and testing capabilities & facilities
- Risk communication
  - Pest Surveillance Committee
  - Communication network among Committee members
- Stakeholder support & collaboration

Preparedness (2)

- Training & Exercises
  - Training to Growers/Importers
  - Emergency Exercises
- Intelligence & Alerts
  - Bulletin Boards eg IPPC, RPPOs, NPPOs, Promed
  - Press
  - Scientific institutions
  - Stakeholders

Preparedness (3)

- Logistics
  - Equipment & Materials (Stockpile)
  - Transport
  - Contingency Manpower
- Legislation
  - Legal empowerment during emergencies
- Funding
- System Review
  - Post exercises
  - Situation monitoring

Thank you

Thailand National Biosecurity Planning

Plant Pathology Research Division

Plant Protection Research & Development Office

Department of Agriculture

Wbutranu@yahoo.com

Land Used

Land used	Area (Ha)	Whole Country(%)
Paddy Field	**10,435,273**	**20.34**
Field Crops	**4,518,663**	**8.81**
Fruit Crops	**4,253,470**	**1.95**
Vegetable+Ornamental	**184,458**	**0.36**
Others(Pastures etc.)	**141,700**	**0.28**
Total	**19,533,564**	**38.06**

Wbutranu@yahoo.com

Tropical Climate

Latitude **17º 37’ N**
Longtitude **101º 15’ E**

Max.Temp. **35-38º C**
Min.Temp. **22-26º C**

Rain Fall **800-2,500 mm**

Ecomic Crops :

- ☆ **Rice, Corn, Sugarcane,**
- ☆ **Cassava, Para rubber,**
- ☆ **Palm oil**

Exported Crops :

- ☆ **Rice, Para rubber, Sugar,**
- ★ **Mango, Longan, Pineapple, Rambutan, Mangosteen,**
- ★ **Okra, Baby corn, Asparagas**
- ☆ **Orchids etc.**

Imported Crops :

- ☆ **Potato, Soybean, Peanut,**
- ★ **Orange, Apple, Grapes**
- ★ **Onion, Garlic, Veg. seeds**
- ☆ **Flowers & Flower seeds etc.**

Surveillance on Powdery Scab of Potato:

Objectives :

-To evaluate powdery scab disease

-To investigate host ranges

-To create the phytosanitary standard measures for imported potato seeds

I General Information :

Potato : *Solanum tuberosum* L.

Taxonomic Position :

Domain : Eukaryota
Phylum : Spermatophyta
Subphylum : Angiospermae
Class : Dicotyledonae
Order : Solanalae
Family : Solanalaceae

II Geographical Distribution :

Origin : Peru-Bolivia

16 th century to Europe

to world wide

18 th-19 th century to Southeast Asia

3. Production and Trades :

The 4 th largest food crop

(rice , wheat, corn)

Exported : Scotland, Germany, China, Australia, Canada, New Zealand

4. Production in Thailand

1982-1991 : Increased

: 3,800-23,000 tons

50-60 % Processing industries

40-50 % Fast food outlets, hotels

Home consumption

Planting areas : 1997-2002

Year	Planting Areas (Ha)	Production (Tons)
1997	5,232	89,546
1998	5,649	93,318
1999	7,326	90,382
2000	9,464	100,122
2001	9,292	90,944
2002	8,242	97,370

5. Major Constraints :

Seed Quality

-Imported …..OK

-Domestic …..No K⇩ 20-50 %

Cultivars : Atlantic, Kenebec

Diseases : Late blight, Early blight

6. Seeds Imported (1998-2003)

Year	Quantity(Tons)
1998	5,508
1999	6,606
2000	10,829
2001	5,025
2002	5,106
2003	15,522

Imported Countries :

Scotland, Australia

Canada, USA,

Netherlands , etc.

Ware potato Imported :

varies each year 500-22,000 Tons

USA, China, Australia

Netherlands , Germany

Canada, Newzealand

8. Phytosanitary requirements for importation of potatoes

Plant Quarantine Act B.E. 2507(1964)

Amended byPlant Quarantine 2 nd ed.

Act B.E. 2542(1999)

Based on the Act :

Imported plants or plant materials are categorized as :

Prohibited materials

Restricted materials

Unprohibited materials

Based on the Act :

Potato was categorized :

Restricted materials

Phytosanitary requirements for importation of potatoes

I. Seed potato :

Phytosanitary certificate with additional declaration stating free of :

8 nematodes , 8 fungi, 1 bacteria,

4 virus, 1 viroid, 1 phytoplasma

Fungi :

Aecidium cantensis

Polyscytalum pustulans

Puccinia pitteriana

Spongospora subterranea

Synchytrium endobioticum

Phoma exigua **var.** *foveata*

Thecaphora solani

Sclerotinia sclerotiorum

Bacteria:

Clavibacter michiganensis* subsp. *sepedonicus

Phytoplasm :

Potato witches' broom phytoplasma

Viroid :

Potato spindle tuber viroid

Virus :

Potato black ring spot virus

Potato mop top virus

Potato yellow dwarf virus

Potato rattle virus

Tolerance level :

Powdery scab :

Tuber having a maximum of 5 or less lesions not exceed 0.1 %

Soil contamination not exceed 0.2 %

★ **Revise after two export seasons**

Tolerance level :

Virus diseases :

Official field visual inspection not exceed 0.1 %

Threshold not exceed 0.1 %

★ **Revise after two export seasons**

Nematodes :

Ditylenchus destructor

Ditylenchus dipsaci

Globodera pallida

Globodera rostochiensis

Heterodera glycines

Heterodera oryzae

Heterodera zeae

Necobbus aberrans

Soils :

Loose soil ; not exceed 100 g/ 50 kg seed

Cake soil ; 5.0 % of tuber in a 600 unit samples

(30 tubers in bags of 25 kg each)

II. Ware Potatoes :

- **Phytosanitary certificate**
- **Only washed potatoes are permitted**

Powdery Scab of Potato

Agent :

***Spongospora subterranea* f.sp. *subterranea* Toml.**

Powdery Scab of Potato :

1. Taxonomic position :

Kingom : Protozoa

Phylum : Plasmodiophoromycota

Class : Plasmodiophoromycetes

Order : Plasmodiophorales

Family : Plasmodiophoraceae

2. Common name :

- ⇨ **corky scab, potato wart disease**
- ⇨ **powdery scab of potato**
- ⇨ **powdery scab of tomato**

3. Host ranges

Primary hosts :

Solanum tuberosum,

Lycopersicon esculentum

Secondary hosts :

Capsicum annuum,

Datura stramonium

Nicotiana rustica etc.

4. Plant Affected :

Stages of infection :

- **pre-emergence, vegetative growing**
- **flowering, post harvest**

Plant part affected :

-**leaves, stems, roots,**
-**vegetative organs**

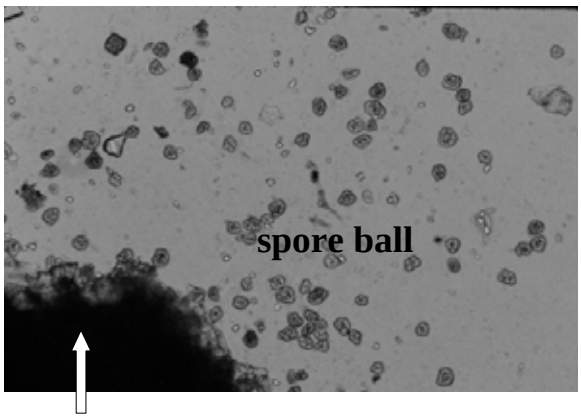
5. Disease symptoms :

Initial : small purple brown, pimple-like pustules

Developed : size increased (30 mm), periderm rupture

Mature : powdery mass of cystosori (spore-ball resting spores)

5. Disease symptoms :



powdery mass of cystosori

6. Phytosanitary risk :

Spread : **seedborne tubers,**

Infection : **tuber lenticels**

Risk : **Potato mop top virus(vector)**
Poor growth,
Predisposed to late blight,
pink rot dry rot, etc.

7. Detection and inspection

Spongospora : cystosori

Streptomyces : conidia barrel-shaped

Symptoms – confusing :

Root knot & false root knot nematode

8. Diagnostic methods

1. **Symptoms**
2. **Elisa test**
3. **PCR**

9. Control methods

1. **Resistant cultivars :**
   Gabriela, Albina
2. **Crop rotation**
3. **Cultural practices :**
   reduced moisture , manual
4. **Seed treatment; hot water 55 ^{o} C**
5. **Chemical ; mancozeb, cymoxamil**
6. **Integrated; resistant cv., rotation, etc.**

10. Surveillance planning :

1. **Survey programs :**
   2-3 times/ cropping season
   2-5 farms/fields each location
   10-15 % of sampling no.

10. Surveillance planning :

2. Disease evaluations :

2.1 Field inspection :

- disease incidence
- disease severity ; root damage
- other hosts infection ; tomato etc.
- Samples collection

10. Surveillance planning :

2.2 Lab diagnosis

-Microscopic inspection

-Culture isolation

-Identification

-Culture collection

-Herbarium collection

3. Conclusion and Reporting

3.1 Established pest lists

Pest lists of Thailand

Pest lists of Asia Countries

Pest lists of global

3.2 Pest risk analysis

Thank You

Sawasdee

BIOSECURITY CONCERNS OF THE FORESTRY SECTOR IN MALAYSIA

Lee Su See & Baskaran Krishnapillay

Forest Research Institute Malaysia
Kepong, 52109 Selangor
Malaysia

FRIM

MS ISO 9001 : 2000

Introduction

Exotic forest pests threaten every country

- Almost all countries have a few exotic pests
- e.g. the USA has > 400 exotic forest insects and > 20 exotic forest diseases

Exotics negatively affect:

- Tree growth and survival
- Biodiversity
- Ecosystem functioning
- Local and national economies
- Trade

FRIM

MS ISO 9001 : 2000

Recent developments

- Since 1992 UN Conference on Sustainable Development, more pressure on conservation of natural forest for environmental, climatic and other concerns
- Led to shift from logging natural forests to plantation forestry as source of timber
- Malaysian govt giving emphasis to forest plantations & rehabilitation/reforestation of degraded lands – new co. under Min. of Plantations Industries and Commodities

FRIM

MS ISO 9001 : 2000

Forest plantations – Peninsular Malaysia

- Early 1970s – trial plantations with exotic pines for pulp & paper production, later abandoned
- 1980s - exotic fast growing spp. planted for general utility timber:
  - *Acacia mangium*
  - *Araucaria* spp.
  - *Eucalyptus* spp.
  - *Gmelina arborea*
  - *Maesopsis eminii*
  - *Paraserianthes falcataria* (*Albizia*)
- BUT no serious commitment to establish large scale forest plantations for timber production

FRIM

MS ISO 9001 : 2000

Forest plantations - Sabah & Sarawak

- 1974 – Sabah Softwoods planted *Pinus caribaea* for pulp industry, replaced with *A. mangium*, *E. deglupta*, *G. arborea*, *P. falcataria*
- 1976 – SAFODA estb. for rehabilitation of grasslands with *A. mangium*
- 1988 – SFI - production of pulp and paper with hardwood timber, *A. mangium, Eucalyptus* spp.
- Sarawak – committed to planting 1 mi ha within the next 10-15 yrs

FRIM

MS ISO 9001 : 2000

Most promising species

- *Acacia mangium* – fast growing, versatile, not site demanding, easily established, few serious pests & diseases, 15 yr rotation for timber
- *Hevea brasiliensis* – 1980s FRIM research showed potential of rubber wood for furniture indsutry. New timber clones developed.

FRIM

MS ISO 9001 : 2000

How do exotic organisms enter a new country?

Deliberate introductions:

-Forest trees and crop plants

-Ornamentals

-Plants for erosion control

-Farm animals

-Pet and aquarium species

-Biological control agents

Accidental introductions:

-Ballast water of ships

-As 'hitchhikers'

-Cut flowers

-Material for scientific study

-Logs and lumber

-Wood packaging material and dunnage

FRIM

MS ISO 9001 : 2000

International trade

- >80% of world products move by sea
- Most cargo is shipped in containers – 20 or 40 ft long
- More than 300 million TEU shipped worldwide in 2003 (1 TEU = 1 Twenty-foot Equivalent Unit)
- Container ships often cross oceans in 1 – 2 weeks
- Inspection rates low worldwide, between 1 – 5 %

FRIM

MS ISO 9001 : 2000

Insect interceptions on logs exported to Japan in 2003

- >12 million m^3 of logs imported to Japan in 2003
- 3205 insect interceptions
- Insects intercepted on logs from 20 of 48 exporting countries

Top 10
Malaysia
Russia
Gabon
Papua New Guinea
USA
Canada
New Zealand
Solomon Islands
Taiwan
Cameroon

Source: Yokohama Plant Protection Station, Japan

FRIM

MS ISO 9001 : 2000

Sirex noctilio – Amylostereum areolatum

Native range: Eurasia, North Africa
Principal host: *Pinus*

Early 1900s – Detected in New Zealand
1952 – Tasmania
1961 – Australia
1980 – Uruguay
1985 – Argentina
1988 – Brazil
1994 – South Africa
2001 – Chile
2004 – USA

FRIM

MS ISO 9001 : 2000

Ceratocystis ulmi & C. novo-ulmi
Dutch Elm Disease

Native range: Asia
Hosts: *Ulmus* spp.

North America
C. ulmi detected in 1920s
C. novo-ulmi found in 1940s

Europe
C. ulmi detected around 1910
C. novo-ulmi found in 1940s

New Zealand
C. novo-ulmi found in 1989

FRIM
MS ISO 9001 : 2000

Biosecurity in Malaysian forestry

- Does Malaysia have a biosecurity plan in place?
- What are the biosecurity concerns of the forest industry?
- Do we need to have such a plan?

FRIM
MS ISO 9001 : 2000

Biosecurity in Forestry

1. Forest protection and phytosanitary issues
2. Alien forest trees and their potential to become invasive
3. Release of new/exotic genotypes including genetically modified trees

FRIM

MS ISO 9001 : 2000

Forest protection & phytosanitary issues (1)

- Monocultures of genetically similar trees:
  - increased probability of pest outbreaks
  - sporadic pests may become permanent problems
- Pest risk analysis:
  - requires reliable, detailed information – lacking for developing countries
- Danger of introduction of new pests with the exotic, e.g. SLB, Fusarium wilt of oil palm
- Threats posed by indigenous pests to the exotic crop

FRIM

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Forest protection & phytosanitary issues (2)

Urgent need for surveys & ID of pests & diseases associated with important tropical timber trees, in both natural and plantation situations

Uromycladium gall rust, *P. falcataria*

Phyllode rust, *A. mangium*

Alien species

- Potential to become invasive
- Effect may be multisectoral
- Difficult to predict which and when
- Need access to reliable information
- Protocols for assessing the risks of introductions need to be developed and validated

New genotypes/microrganisms

•Potential adverse effects e.g. displacement of indigenous taxa and genotypes, transfer of genes

•Introduction of biocontrol agents, mycorrhizas, symbionts,

pollinators, etc.

•GMOs – high potential in

improving forestry, e.g. poplars in China – risk assessment in long-term crops difficult

FRIM

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Where does Malaysia stand?

- Monitoring movement of planting materials – Crop Protection & Quarantine Division, Department of Agriculture
- Study of pests of forest plantations, forest products – FRIM, Forestry Research Centres (FRC) of Sabah and Sarawak
- No formal Biosecurity plan or policy

FRIM

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Problems in forest health surveillance

- Most observations *ad hoc*
- Need for systematic surveillance
- Large forest areas – plantations, natural forests
- Difficult terrain
- Trees – long-term crops
- Insufficient trained manpower

FRIM

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Limitations/Issues

- Lack of reliable, detailed information
- Need for more and improved coordination between different agencies, ministries, neighbouring countries
- Implementation of plan when enacted:
  - laws and policies enacted by Federal govt.
  - land and forests under State jurisdiction

FRIM

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International Forest Quarantine Research Group (IFQRG)

Formed in 2003 to address forestry quarantine issues related to ISPM 15 (Guidelines for regulating wood packaging material in international trade) through discussion and collaborative research

http://www.forestry-quarantine.org

1st research question sent to IFQRG:

Do insects and disease organisms infest wood after HT or MB treatment, especially when bark is present?

FRIM

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Conclusion

- Malaysia needs a Forestry Biosecurity Plan to safeguard the planned large-scale forest plantations
- Survey of pests and monitoring of natural forests to protect precious natural heritage
- Compliance with the international agreements Malaysia has signed
- Take advantage of the trade opportunities available through the WTO and protect timber exports

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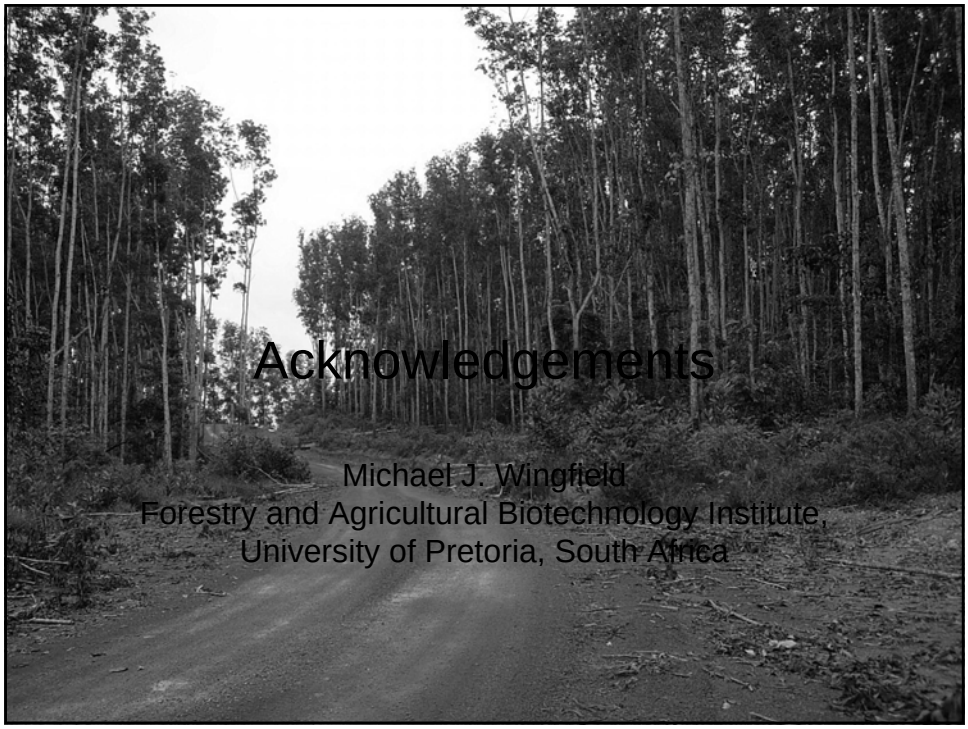

Acknowledgements

Michael J. Wingfield
Forestry and Agricultural Biotechnology Institute,
University of Pretoria, South Africa

Threat identification and pathway analysis

An introduction to Group Discussion II

What is a potential threat?

- Known exotic plant pest
- It is a variant form of an established plant pest
- It is a serious plant pest of unknown or uncertain origin
- Plant pest of potential economic importance

To identify threats

- Past records
- Existing protection plans
- Relevant experience
- Relevant published literature
- Research
- Specialist and expert judgement
- Economic models

To identify pest threats

- What pests do your neighbours have that aren't in your country?
- What are your imports?
- What are your most important industries?
- Is there import of planting materials and/or seeds?

Ranking pest threats

- What are the entry, establishment and spread possibilities?
- What are the likely impacts of the pest?
- How difficult is the organism to control?

Pathway analysis

- Potential for entry
- Potential for establishment
- Potential for spread
- Potential for economic or environmental damage

Analysing potential threats

The potential for entry, establishment, spread and economic or environmental damage is ranked as:

- Negligible
- Low
- Medium
- High
- Unknown

Estimating potential for entry

- Risk represented by the no. consignments
- The likelihood that pest associated with pathway at origin
- Likelihood of pest surviving during transportation
- Likelihood of pest surviving existing management practices
- Take into account previous interceptions of pest
- What is pathway destination?
- Risk of intended use of commodity

Estimating potential for establishment

- Are there suitable hosts in importing country?
- If pest transmitted by vectors are suitable vectors available?
- Is environment suitable for pest?
- Risk that existing controls for other pests unable to provide control
- What risk does biology of pest represent?

Estimating the potential for spread

- How suitable is natural or managed environment?
- Are vectors likely to spread
- Risk that pest transported with commodities in importing country
- Likelihood pest spreading to area of higher economic importance
- Level of risk represented by intended use of commodity
- Likelihood natural enemies unable to control spread

Estimating potential for economic or environmental damage

- What is economic loss in existing geographical range
- Potential economic loss in importing country
- Potential loss to non-agricultural factors (e.g. natural environment)

Risk estimation matrix

Likelihood of entry, establishment or spread

Consequences of entry, establishment or spread

	Negligible impact	Very low	Low	Moderate	High	Extreme impact
High likelihood	Negligible risk	Very low risk	Low risk	Moderate risk	High risk	Extreme risk
Moderate	Negligible risk	Very low risk	Low risk	Moderate risk	High risk	Extreme risk
Low	Negligible risk	Negligible risk	Very low risk	Low risk	Moderate risk	High risk
Very low	Negligible risk	Negligible risk	Negligible risk	Very low risk	Low risk	Moderate risk
Extremely low	Negligible risk	Negligible risk	Negligible risk	Negligible risk	Very low risk	Low risk
Negligible likelihood	Negligible risk	Negligible risk	Negligible risk	Negligible risk	Negligible risk	Very low risk

Threat Summary Table

Common name	Citrus huanglongbing	Coconut leaf moth	Spider mite
Scientific name	Liberibacter asiaticus	Artona catoxantha	Tetranychus piercei
Primary host	Citrus and citrus relatives	Polyphagous – coconut, sago	Polyphagous
Plant part affected	Whole plant		
Entry potential	Medium		High
Establishment potential	High	Low	High
Spread potential	High	Low	High
Economic impact	High	Low	Medium

etc.

Pest priority list

The most serious threats from threat summary table can be identified through a process of risk assessment

Usually group them as:

1. pests currently not in your country
2. pests already present but under active control.

Discussion points

- Information sources required for identifying potential threats
- How many of these information sources are readily available in your country
- Once potential threats identified, is ecological information available for accurate pathway analysis?
- What are the major threats facing you with respect to threat identification and pathway analysis?

DEVELOPING BIOSECURITY PLANS: RISK MITIGATION AND RESEARCH AND DEVELOPMENT

Introduced by Graeme Evans

Risk Mitigation

Mitigating risk in traded commodities

The challenge for governments in the trading environment dominated by the World Trade Organization is to liberalise trade in line with the rules set out in the Agreement on the Application of Sanitary and Phytosanitary Measures. At the same time, governments need to exclude exotic pests that may undermine their capacity to trade in some markets. Governments recognise the risks and many have increased security at the border. Increasingly, many are seeking to address risk in the countries where traded commodities are produced.

Risk mitigation (phytosanitary) measures that are used to address risk in traded commodities include:

- Prohibition on proposed trade;
- Post entry quarantine, with testing for pathogens
- Quarantine in a third country, eg., rubber into south east Asia;
- Physical treatments
    - heat, cold, irradiation
- Chemical treatments
    - fumigation, pesticides, including herbicides;
- Process commodity under quarantine supervision pre-export or post arrival;
- Source commodities from pest-free areas and areas of low pest prevalence
    - surveillance, crop sanitation and in-crop pest management;
- Source commodities from protected environments
    - glasshouses, isolated environments, bagged fruit;
- Prohibition on parts of the host;
- Source commodities from certified crops, especially for seed;
- Harvest crops at an age when commodities are not susceptible;
- Harvest crops at a specified time of year;
- Control/regulate destination of commodities;
- Systems approach - involves a combination of measures to meet the importing country's acceptable level of protection, eg, areas of low pest prevalence, in-crop treatment, inspection and certification;
- Pre-export and post-arrival inspection.

The process of identifying and selecting risk management measures may involve consideration of the following:

- What options are available to manage the risk?
- How effective are the options?
- How feasible are the options?
- What impacts do the options have?
- What is the best option, taking into account obligations under the SPS Agreement and the IPPC, and the need to ensure an appropriate level of protection.

Mitigating Risk associated with non-traded commodities, illegal movement of commodities and other pathways for moving plant pests

Another approach to bio security is to plan ahead for incursions of exotic pests and to establish institutional structures and enact legislation so that authorities can put in place measures to contain and/or eradicate new pest incursions or, preferably, to keep exotic pest off-shore.

Were is possible to predict the arrival of exotic pests of agriculture, governments and industry would undoubtedly take pre-emptive steps to mitigate the risks. In practice, it is not possible to predict which new pests will arrive to threaten agriculture and, as a consequence, governments and industry often do not take pre-emptive action against the threats posed by exotic pests. However, analysis of the risks can provide a target list of those pests that pose the greatest threat to industry based on current knowledge of their behaviour and possible pathways for entry into new areas. Biosecurity planning is a strategic exercise to identify and rate the most likely threats posed by exotic diseases and to put in place measures to mitigate the risks, including through research and development. Workshop participants have addressed the issue of target lists in the previous session introduced by Dr Asteraki.

Workshop exercises

In this session, workshop participants are asked to consider and list pre-emptive actions, including through research and development, that might be undertaken to mitigate the risks posed by

- An exotic pest that threatens the oil palm industry of south east Asia; and
- an exotic pest of grapevines that could have a major impact on a number of countries around the world.

Workshop participants will be allocated to different groups to consider the essential elements of a biosecurity plan for one of the pests described below. Each group will nominate a ‘facilitator’ and someone to report back in a plenary session.

Red ring of oil palm

Much of the world's oil palm is concentrated in the countries of South East Asia. The industry there is based on germplasm that is exotic to the area. Through rigorous quarantine action and much good fortune, the oil palm industry is free from many serious exotic pests that attack *Elaeis guineensis* (endemic in Africa) and *Elaeis oleifera* (endemic to South America). The industry in south east Asia developed from a very narrow genetic base, although this has been expanded with the introduction of new germplasm to exploit desirable traits in non-commercial lines. However, there is a risk that the genetic base may narrow with the proposed introduction of clonal stock for propagation. The vulnerability of such plantings to the introduction of exotic pests is obvious.

The cause of red ring disease is the nematode *Bursaphelenchus cocophilus*. The nematode is known to be transmitted by the weevil *Rhynchophorus palmarum*. Other weevils, such as *Metamasius hemipterus, Dynamis borassi, Limnobaris calandriformis* and *Strategus aloeus* are also implicated as vectors in South America.

There are several species of *Rhynchophorus* living on oil palm in south east Asia, including *R. vulneratus, R. ferruginous and R. bilineatus*, but nothing is known of the capacity of these species to vector *B. cocophilus.*

The disease was first reported on coconut in 1905 in Trinidad but is now widespread in oil palm in South America. South east Asia is free from the disease. Whereas once the disease was considered the most serious in oil palm, it is now controlled to a large extent by treating wounds on palms, poisoning affected plants, rather than cutting these down, followed by removal of the affected plants. Mass trapping of the vector *R. palmarum* using baits reduces the population of the weevil and the incidence of red ring disease. The bait used is 'rhynchophorol', the aggregation pheromone produced by the male of the species, with sugar cane as a food source.

B. cocophilus is considered to be an obligate parasite and will not survive in rotting tissue beyond a few weeks and will die within a few days in soil. Other species of palm, especially coconut are known to be hosts of the pathogen.

Pierce's disease of grapevines

Pierce's Disease (PD) caused by the bacterium *Xylella fastidious* re-emerged as a serious problem in grape-growing regions in southern California in 1999. The severity of the outbreak was attributed to the appearance of a new insect, the Glassy Winged Sharpshooter (GWSS), *Homalodisca coagulata* that transmits PD. The sharpshooter feeds more intensely on grape vines and travels greater distances that other known vectors of PD. There is growing concern that the occurrence of GWSS in California may spread further north and into the premium grape growing regions in the Napa and

Sonoma Valleys. Apart from Yugoslavia, the disease remains confined to the US states of California, Florida and Texas as well as Mexico and Central America.

X. fastidiosa blocks the xylem vessels of plants and causes symptoms similar to water stress, resulting in the death of infected vines within two years. There are many different strains of *X.fastidious* that infect a range of plants, including citrus, almond, and ornamental plants such as hydrangea and fuschia.

Introduction to Group Discussion IV-

BIOSECURITY PREPAREDNESS:

Collections, Host-pest Lists, Datasheets and Diagnostic Tools

CAB International

Key Elements of a Biosecurity Plan (*after Evans, Dempsey & Merriman 2001)*

- **Threat identification**
- **Pathway analysis**
- **Surveillance**
- **Diagnostic Capacity**
- **Pre-emptive research & development**
- **Domestic legislation & institutional**
- **Responsibilities**
- **Funding emergencies**

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Preparedness ……..

Knowledge of industry pest status Identifying exotic pest threats Threat identification Surveillance	Host-pest list Specimen collections Diagnostic tools and capacity Data sheets for target pests Diagnostic tools and capacity

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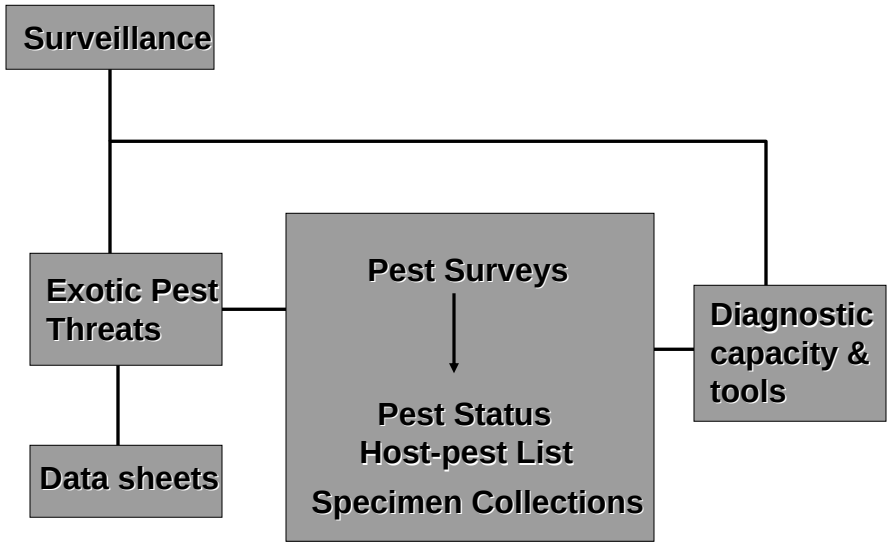


CAB International

ISPM standard for diagnostic protocols for specific pests

Viruses and phytoplasmas
Plum pox virus
Tospoviruses
Citrus tristeza virus
Phytoplasmas
Bacteria
Erwinia amylovora
Xylella fastidiosa
Liberibacter/Liberobacter spp
Xanthomonas fragariae
X. axonopodis pv citri
Nematodes
Ditylenchus destructor/dipsaci
Xiphenema americanum group
Bursaphalenchus xylophilus
Insects and Mites
Anastrepha spp
Anoplophora spp
Trogoderma granarium
Thrips palmi

Importance of tools in:

- **Pre-emptive research**
- **Trace-backs**
- **Effective quarantine**
- **Rapid detection & rapid response**

CAB International

Questions-

- Are available pest lists adequate to work with in the identification of exotic pest threats? (*coverage, quality*)
- Are current lists supported by biological collections? (*standards*)
- What are the gaps in capacity to identify and evaluate exotic pest threats? (*pest surveys, diagnostics, IRAs, quality information*)
- Define opportunities/approaches to address these gaps

Information sources for *Biosecurity* planning

APEC Biosecurity planning workshop

Mike Robson, FAO

17 August 2005

Kuala Lumpur, Malaysia

Information sources for *Biosecurity* planning

- A REMINDER: what have we been trying to do in this *Biosecurity* planning workshop
- what are some of the relevant sources of information
- a demonstration of one system developed by FAO which may help

Biosecurity planning

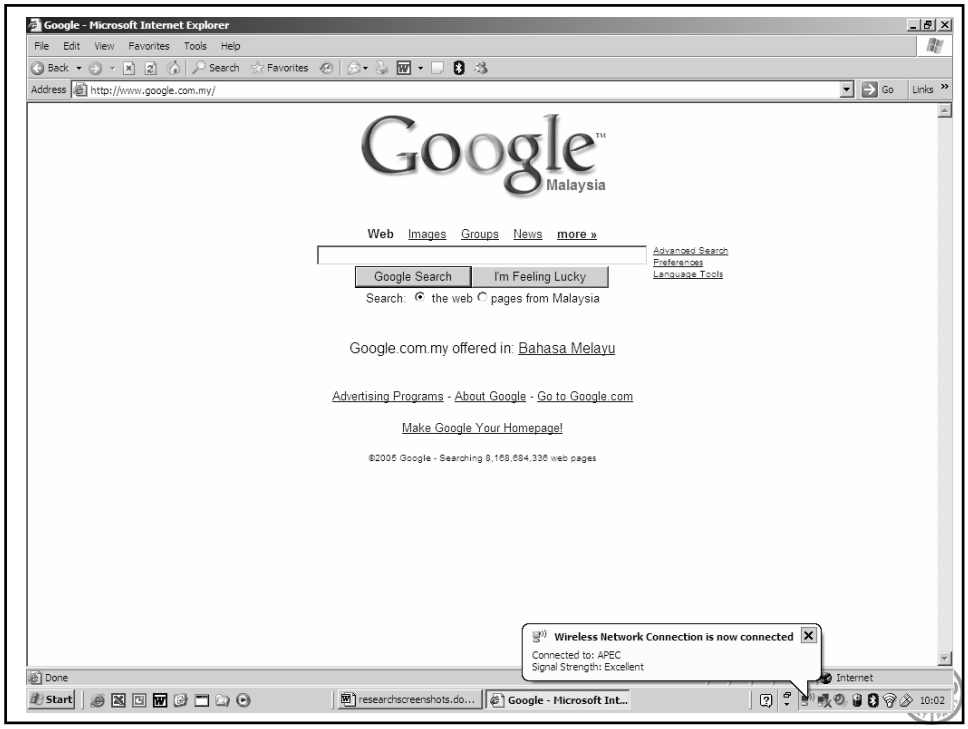
- first, consider the country's *Biosecurity* system
  - who is responsible for what?
  - how are these responsibilities documented?
  - how are resources allocated?
  - how is coordination between inspection (border), policy makers, scientists (diagnosis, pest specialists) achieved?

(highlighted as "governance issues" which have not been covered in the workshop so far)

Biosecurity planning - pre-, at- and post border

- identifying potential threats
  - current pest/disease status
  - historical experience
  - experience of trading partners
  - scientific and grey literature
- develop mitigation strategies
- plan practical actions to improve preparedness (collections, pest lists, etc)

How to meet the associated information needs?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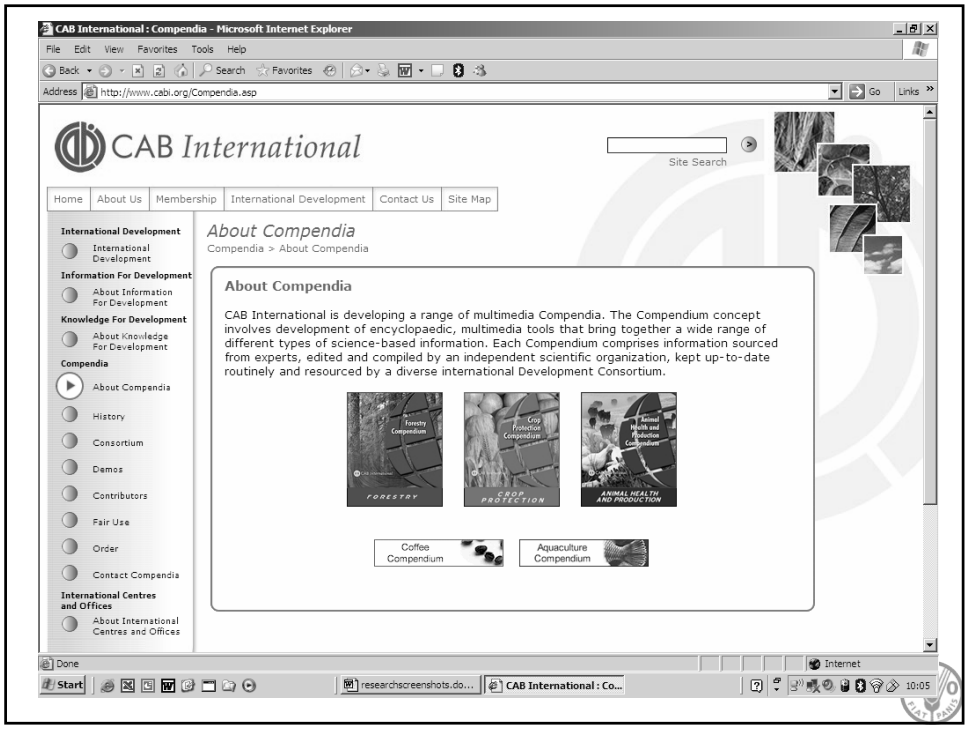
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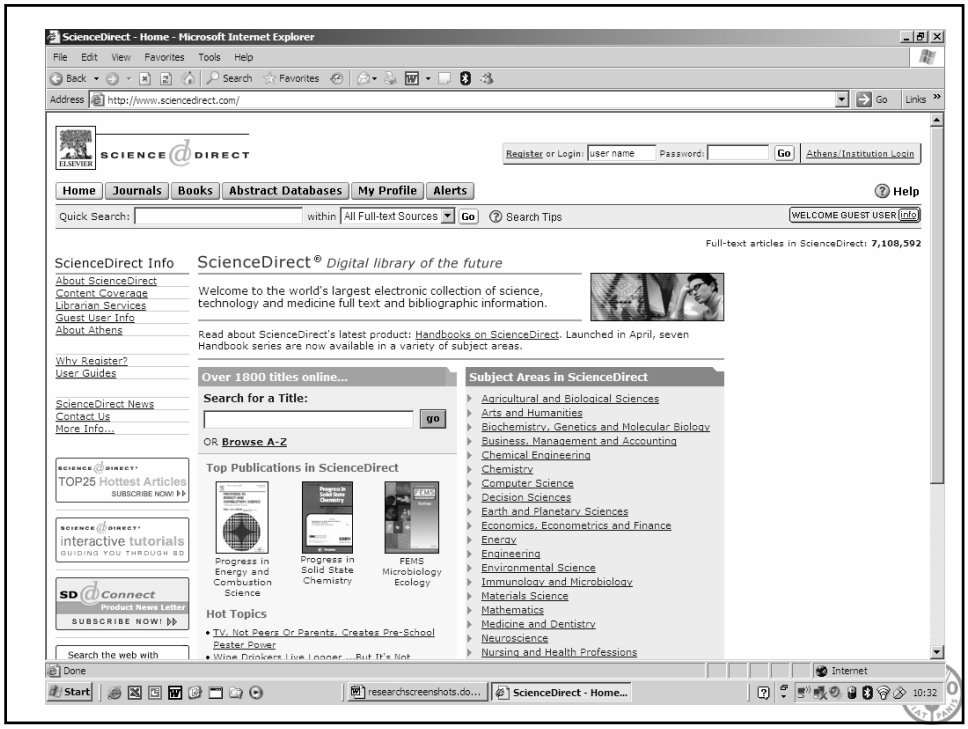
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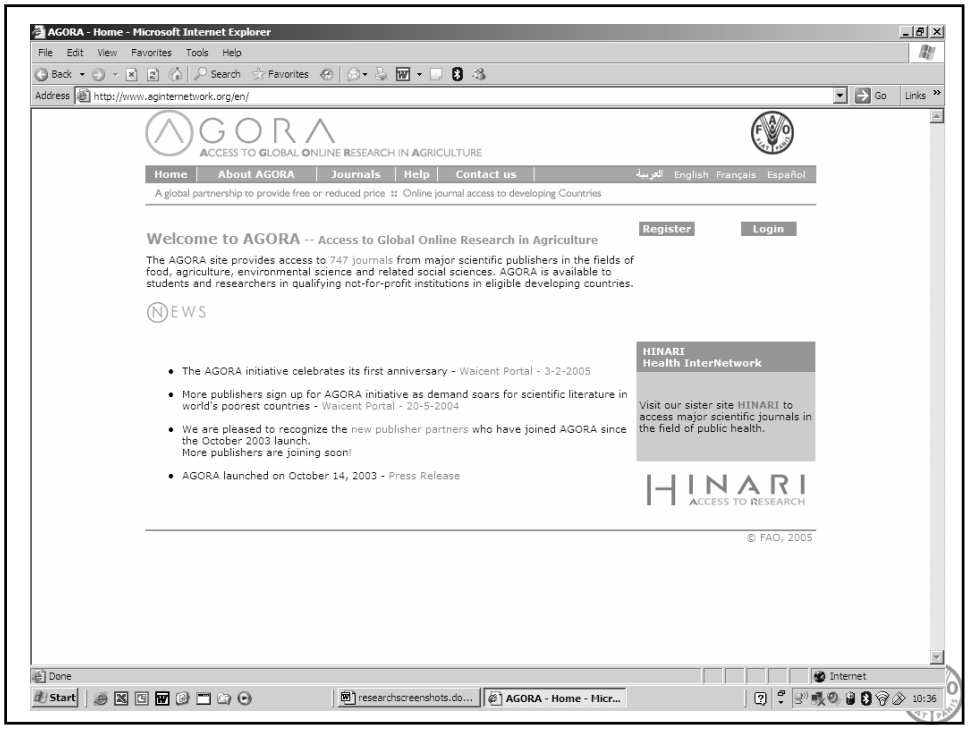
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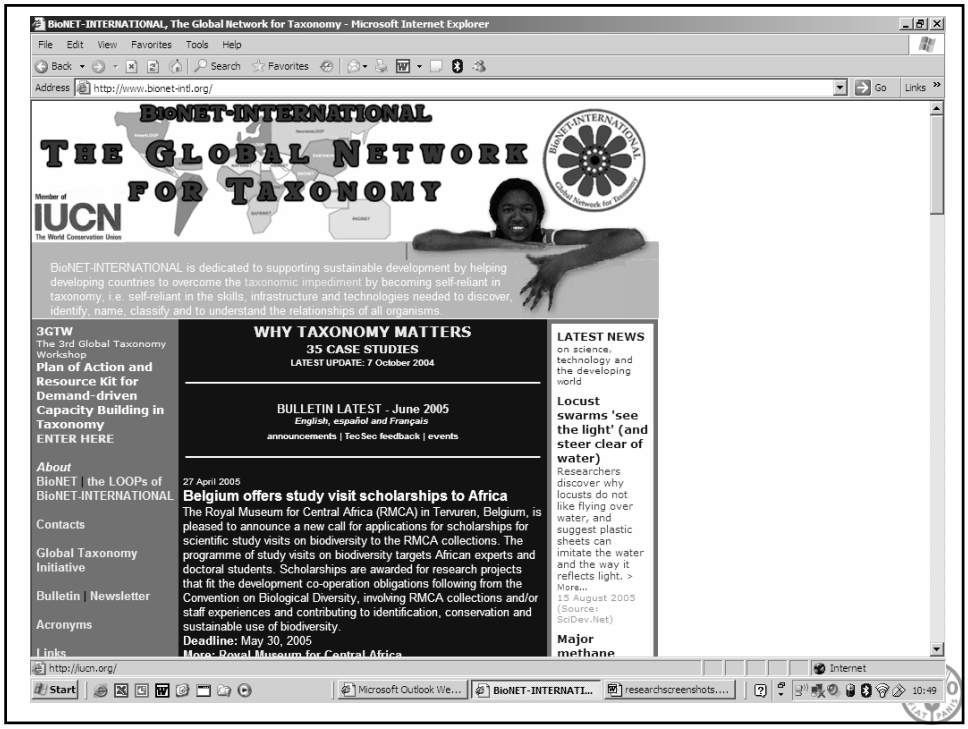
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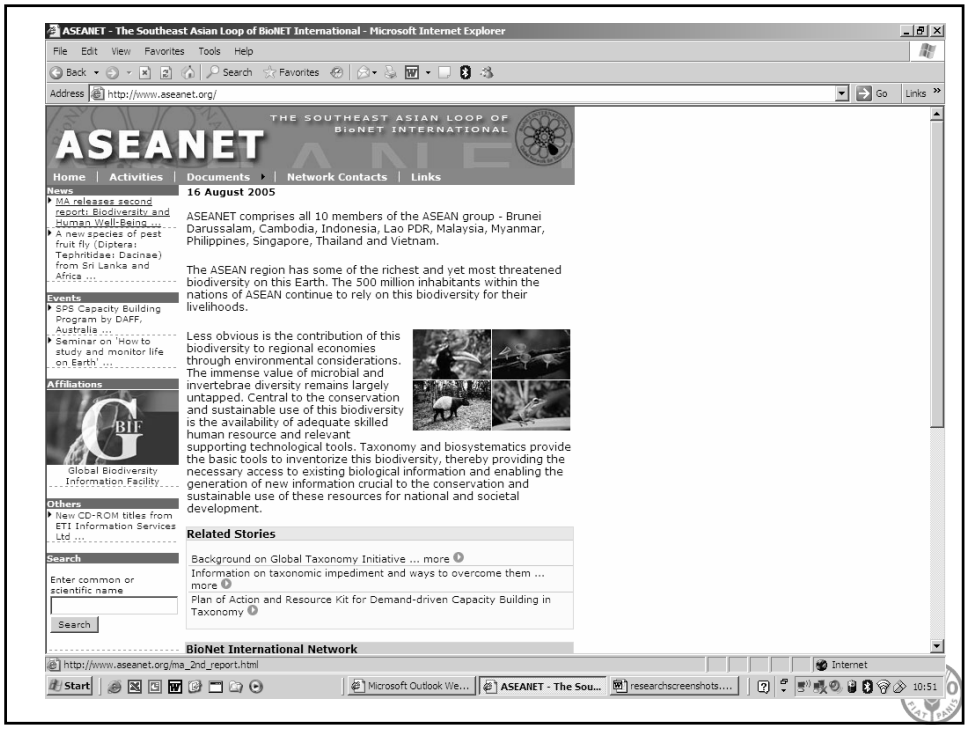
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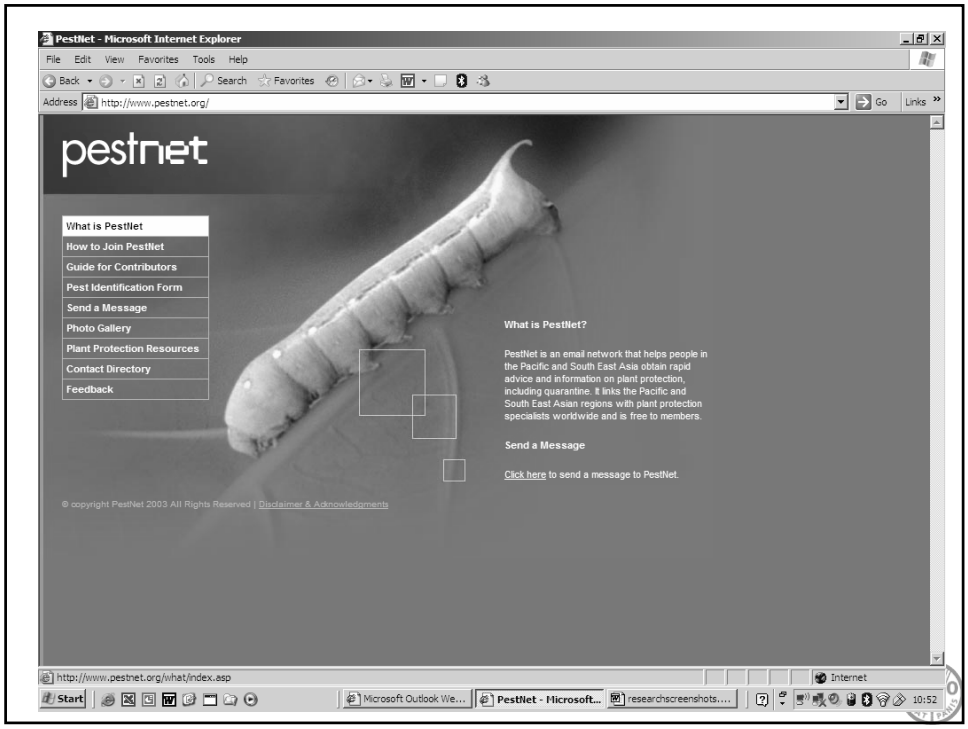
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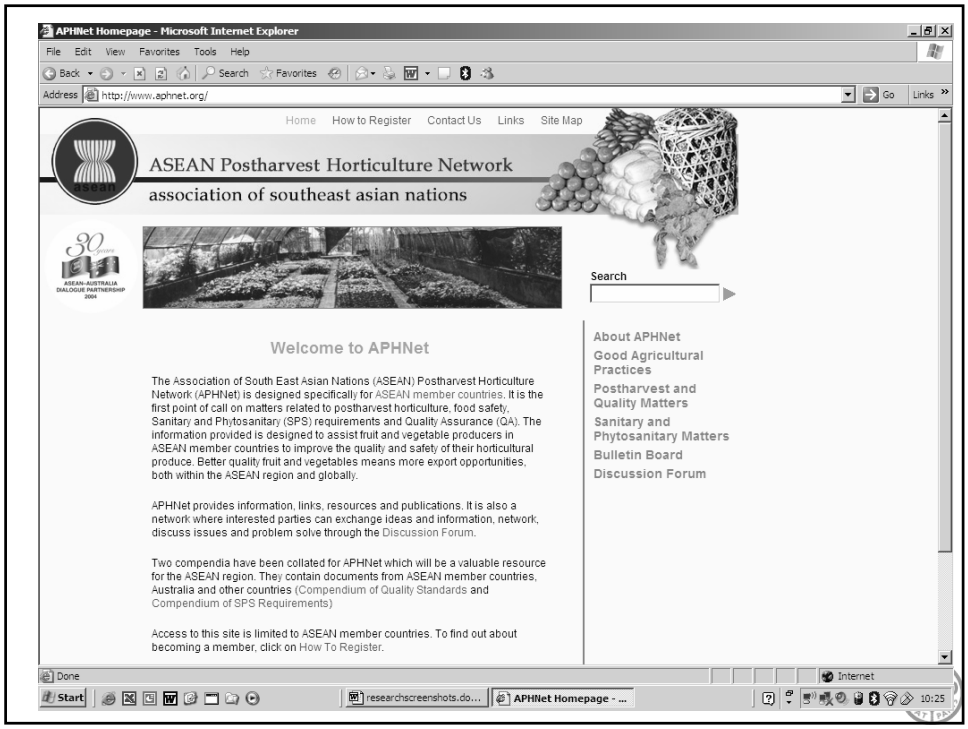
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The Association of South East Asian Nations (ASEAN) Postharvest Horticulture Network (APHNet) is designed specifically for ASEAN member countries. It is the first point of call on matters related to postharvest horticulture, food safety, Sanitary and Phytosanitary (SPS) requirements and Quality Assurance (QA). The information provided is designed to assist fruit and vegetable producers in ASEAN member countries to improve the quality and safety of their horticultural produce. Better quality fruit and vegetables means more export opportunities, both within the ASEAN region and globally.
APHNet provides information, links, resources and publications. It is also a network where interested parties can exchange ideas and information, network, discuss issues and problem solve through the Discussion Forum.
Two compendia have been collated for APHNet which will be a valuable resource for the ASEAN region. They contain documents from ASEAN member countries, Australia and other countries (Compendium of Quality Standards and Compendium of SPS Requirements)
Access to this site is limited to ASEAN member countries. To find out about becoming a member, click on How To Register.
About APHNet
Good Agricultural Practices
Postharvest and Quality Matters
Sanitary and Phytosanitary Matters
Bulletin Board
Discussion Forum
Done
Internet
Start
researchscreenshots.do...
APHNet Homepage - ...
10:25

Information sources for *Biosecurity* planning

- Google
- CABI and other compendia; peer-reviewed scientific publishing
- local sources (internal/grey literature, “industry experts”, and published)
- GISP and other international initiatives
- projects (Pestnet; aphnet)

..

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- local sources (internal/grey literature, “industry experts”, and published)
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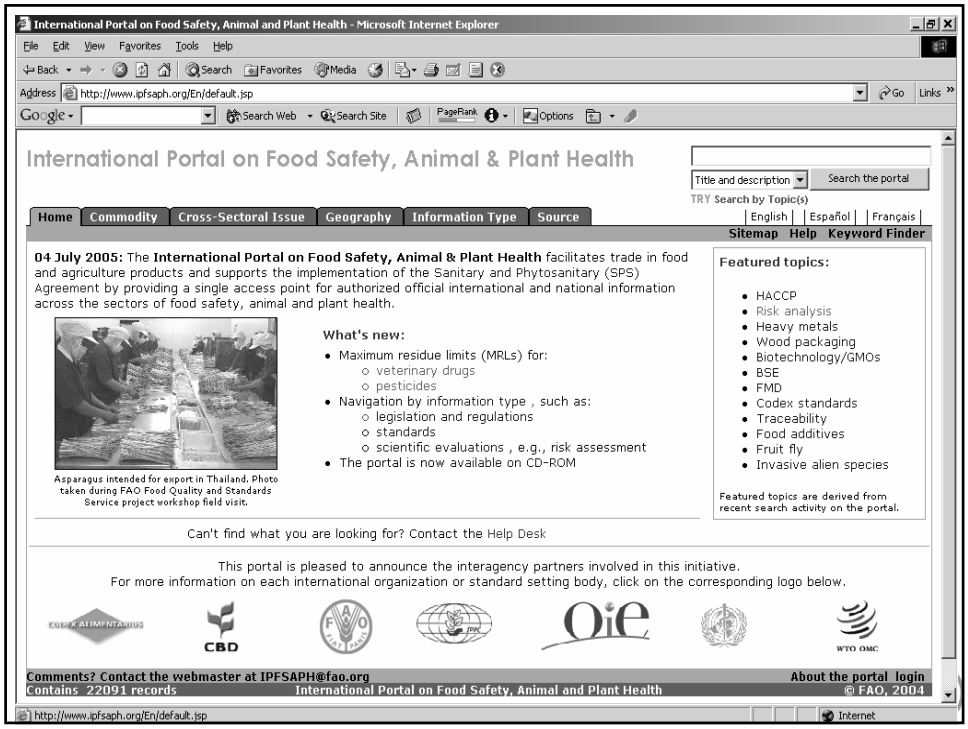
as well as...



International portal on Food Safety, Animal and Plant Health (IPFSAPH)

"An internet-based system to hold all **official science-based** information relevant to food safety, animal and plant health"

Why have we built it

To provide an authoritative means of accessing official information on food safety, animal and plant health relevant to the SPS Agreement

To allow cross-cutting queries (do more than just look at the sites of the standard setting bodies and the WTO)

Advantages over other internet sources:

- *an easily accessible **single source** for all official SPS-related information*
- *a portal of definitive sources – **not interpretations**;*
- *data owned (and maintained) **only** by standard-setting bodies, relevant international organisations and national authorities*

Who is it for

• **national users can search** for international standards and rules/regulations as applied by trading partners

• **national data owning institutions** make their own information available through portal to demonstrate **good governance** to trading partners

Who...(is it for)

• **national us**
standards an
by trading pa

- **WTO inquiry points**
- **Export promotion agencies**
- **Industry associations**
- **Large producers/traders**
- **Policy researchers**

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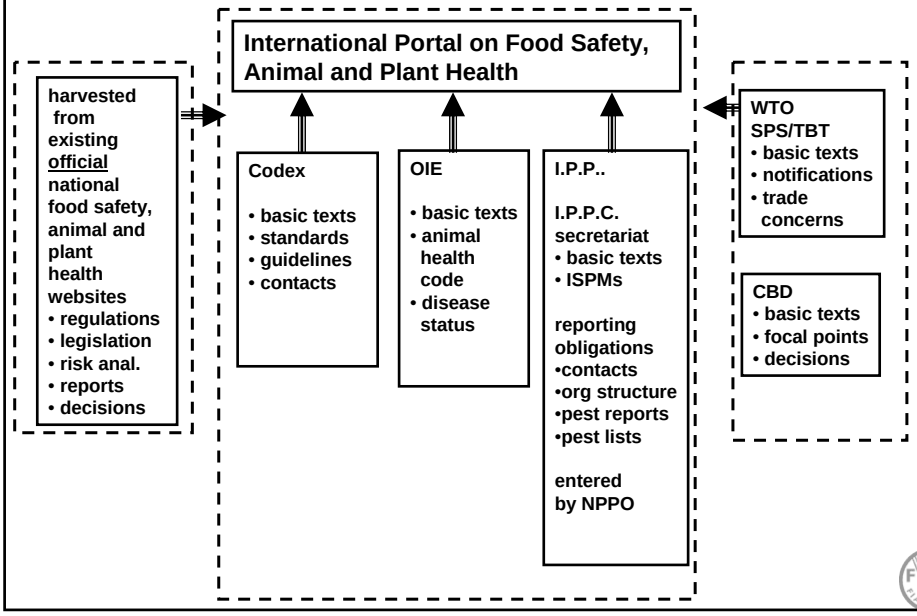
- **Agriculture/Rural Affairs Ministry**
- **Health Ministry**
- **Biosecurity agenc(ies)**
- **Standards bureau**
- **National technical, scientific institutes**

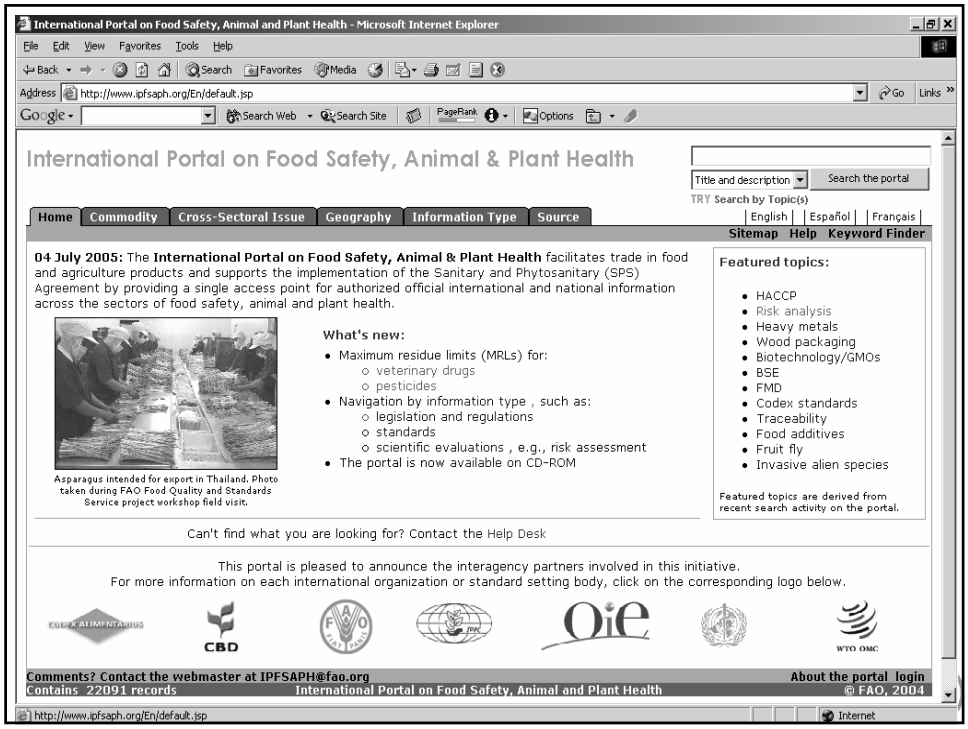
How does it work



Material is categorised by

- **Commodity** (HS codes)
- **Cross-sectoral Issue**
- **Geography** (which countries are affected)
- **Information Source**
- **Information Type** (legislation, standards, specifications, etc)

[see design of the blue navigation tabs]



About – "www.ipfsaph.org"

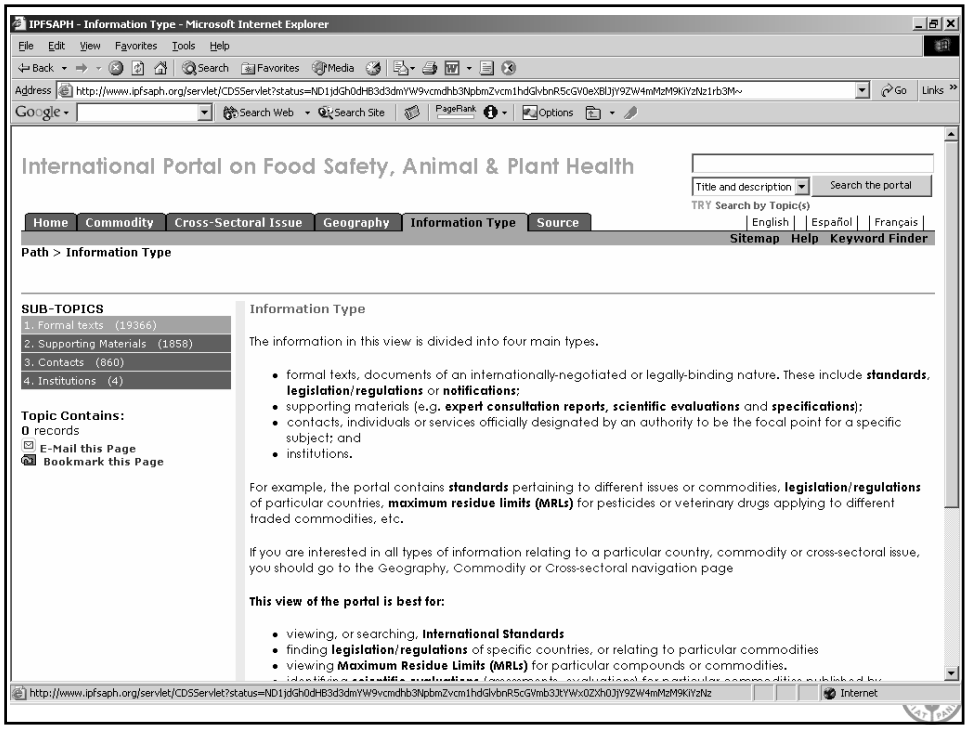
- contains 22,000 records drawn from WTO, CBD, Codex, OIE and IPPC, plus official information from the US and EU
- up-to-date information on Codex-established MRLs for vet drugs and pesticide, with relevant evaluations
- help desk available for any questions users have

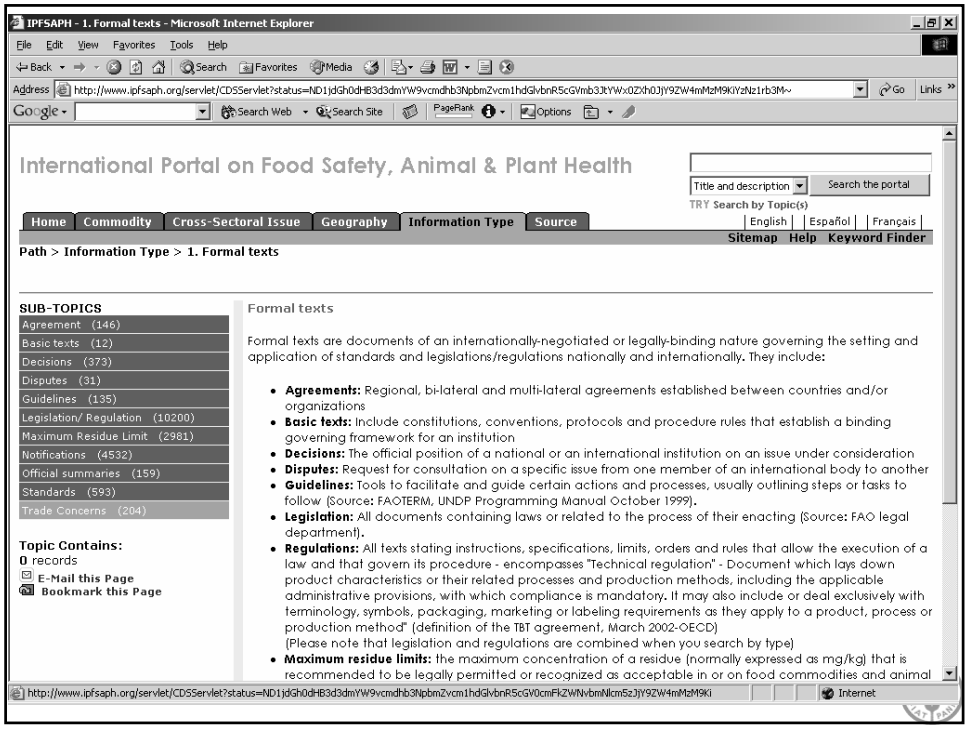
Phase one (international) complete: phase two national/regional roll out underway

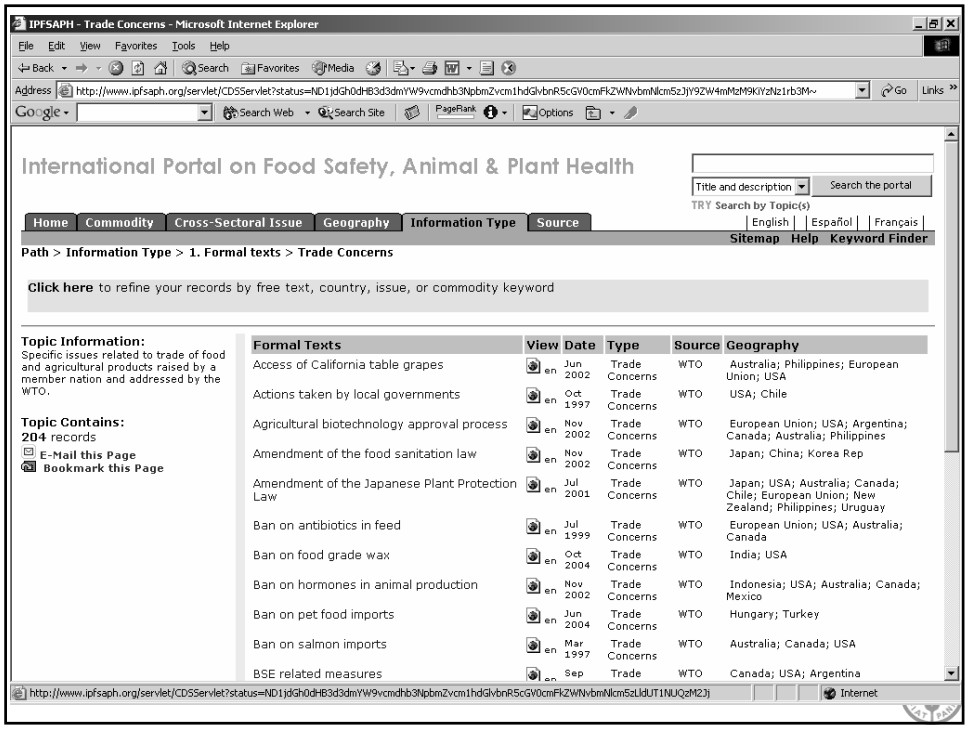
Demonstration/1

Navigate the site:

- *Click on Type/ Formal texts/* ***Trade concerns*** *to view WTO trade concerns*




IPFSAPH - 1. Formal texts - Microsoft Internet Explorer
International Portal on Food Safety, Animal & Plant Health
Search the portal
Home
Commodity
Cross-Sectoral Issue
Geography
Information Type
Source
Sitemap Help Keyword Finder
Path > Information Type > 1. Formal texts
SUB-TOPICS
Agreement (146)
Basic texts (12)
Decisions (373)
Disputes (31)
Guidelines (135)
Legislation/ Regulation (10200)
Maximum Residue Limit (2981)
Notifications (4532)
Official summaries (159)
Standards (593)
Trade Concerns (204)
Topic Contains:
0 records
E-Mail this Page
Bookmark this Page
Formal texts
Formal texts are documents of an internationally-negotiated or legally-binding nature governing the setting and application of standards and legislations/regulations nationally and internationally. They include:
Agreements: Regional, bi-lateral and multi-lateral agreements established between countries and/or organizations
Basic texts: Include constitutions, conventions, protocols and procedure rules that establish a binding governing framework for an institution
Decisions: The official position of a national or an international institution on an issue under consideration
Disputes: Request for consultation on a specific issue from one member of an international body to another
Guidelines: Tools to facilitate and guide certain actions and processes, usually outlining steps or tasks to follow (Source: FAOTERM, UNDP Programming Manual October 1999).
Legislation: All documents containing laws or related to the process of their enacting (Source: FAO legal department).
Regulations: All texts stating instructions, specifications, limits, orders and rules that allow the execution of a law and that govern its procedure - encompasses "Technical regulation" - Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marketing or labeling requirements as they apply to a product, process or production method" (definition of the TBT agreement, March 2002-OECD)
(Please note that legislation and regulations are combined when you search by type)
Maximum residue limits: the maximum concentration of a residue (normally expressed as mg/kg) that is recommended to be legally permitted or recognized as acceptable in or on food commodities and animal


IPFSAPH - Trade Concerns - Microsoft Internet Explorer
International Portal on Food Safety, Animal & Plant Health
Search the portal
Home
Commodity
Cross-Sectoral Issue
Geography
Information Type
Source
Sitemap Help Keyword Finder
Path > Information Type > 1. Formal texts > Trade Concerns
Click here to refine your records by free text, country, issue, or commodity keyword
Topic Information:
Specific issues related to trade of food and agricultural products raised by a member nation and addressed by the WTO.
Topic Contains:
204 records
E-Mail this Page
Bookmark this Page
Formal Texts | View | Date | Type | Source | Geography
Access of California table grapes | en | Jun 2002 | Trade Concerns | WTO | Australia; Philippines; European Union; USA
Actions taken by local governments | en | Oct 1997 | Trade Concerns | WTO | USA; Chile
Agricultural biotechnology approval process | en | Nov 2002 | Trade Concerns | WTO | European Union; USA; Argentina; Canada; Australia; Philippines
Amendment of the food sanitation law | en | Nov 2002 | Trade Concerns | WTO | Japan; China; Korea Rep
Amendment of the Japanese Plant Protection Law | en | Jul 2001 | Trade Concerns | WTO | Japan; USA; Australia; Canada; Chile; European Union; New Zealand; Philippines; Uruguay
Ban on antibiotics in feed | en | Jul 1999 | Trade Concerns | WTO | European Union; USA; Australia; Canada
Ban on food grade wax | en | Oct 2004 | Trade Concerns | WTO | India; USA
Ban on hormones in animal production | en | Nov 2002 | Trade Concerns | WTO | Indonesia; USA; Australia; Canada; Mexico
Ban on pet food imports | en | Jun 2004 | Trade Concerns | WTO | Hungary; Turkey
Ban on salmon imports | en | Mar 1997 | Trade Concerns | WTO | Australia; Canada; USA
BSE related measures | en | Sep | Trade | WTO | Canada; USA; Argentina

Demonstration/2

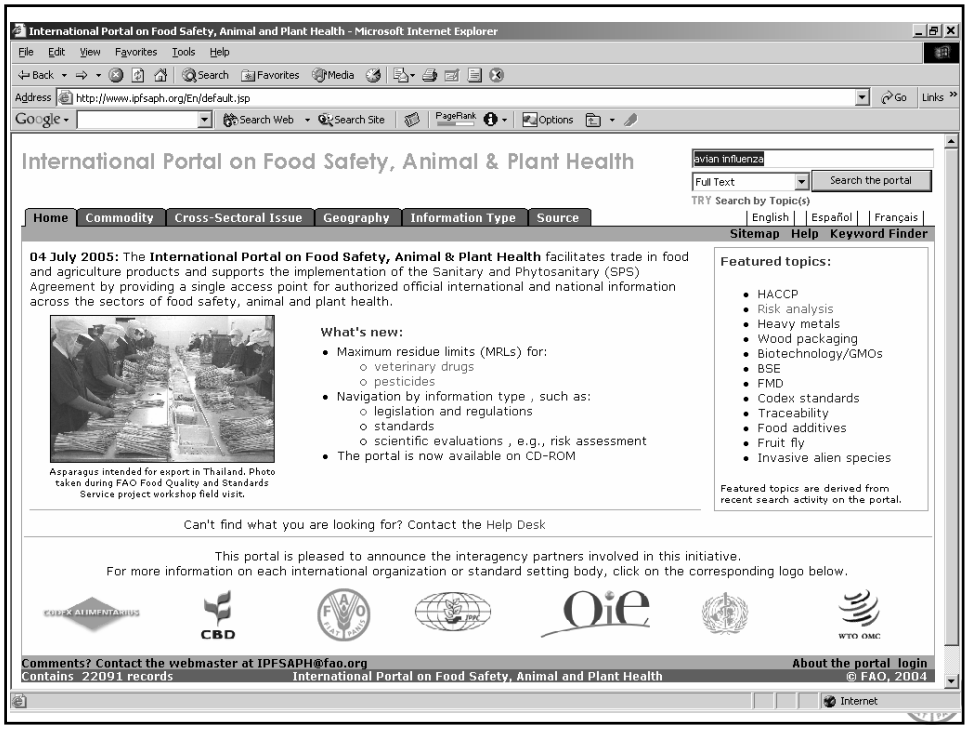
Search box – enter term or phrase

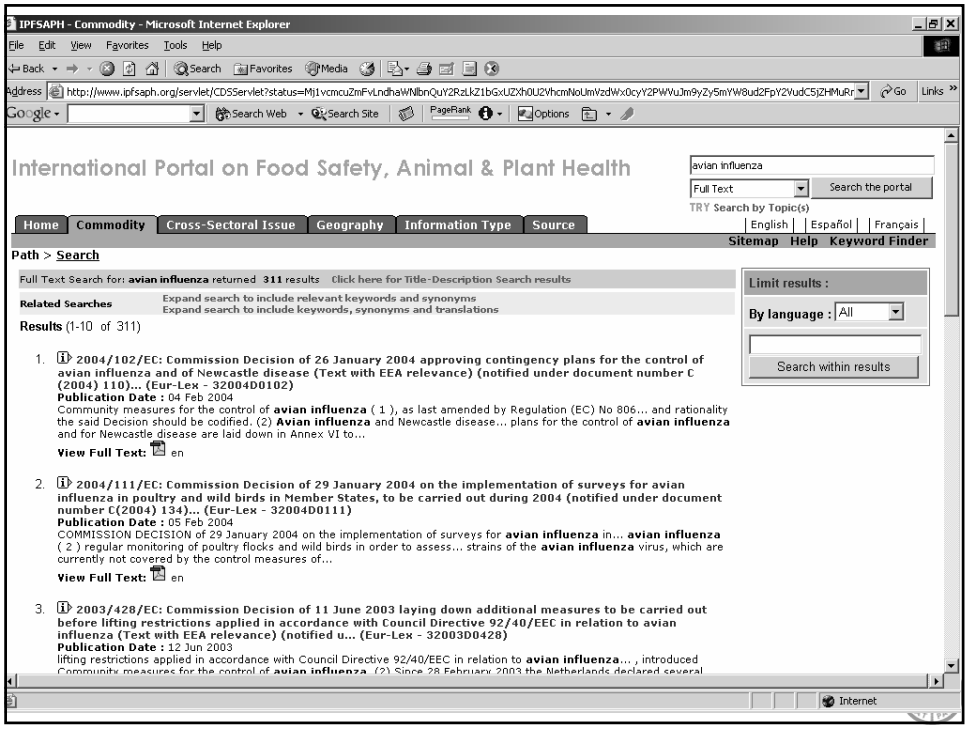
Choose to search either title & description OR full text

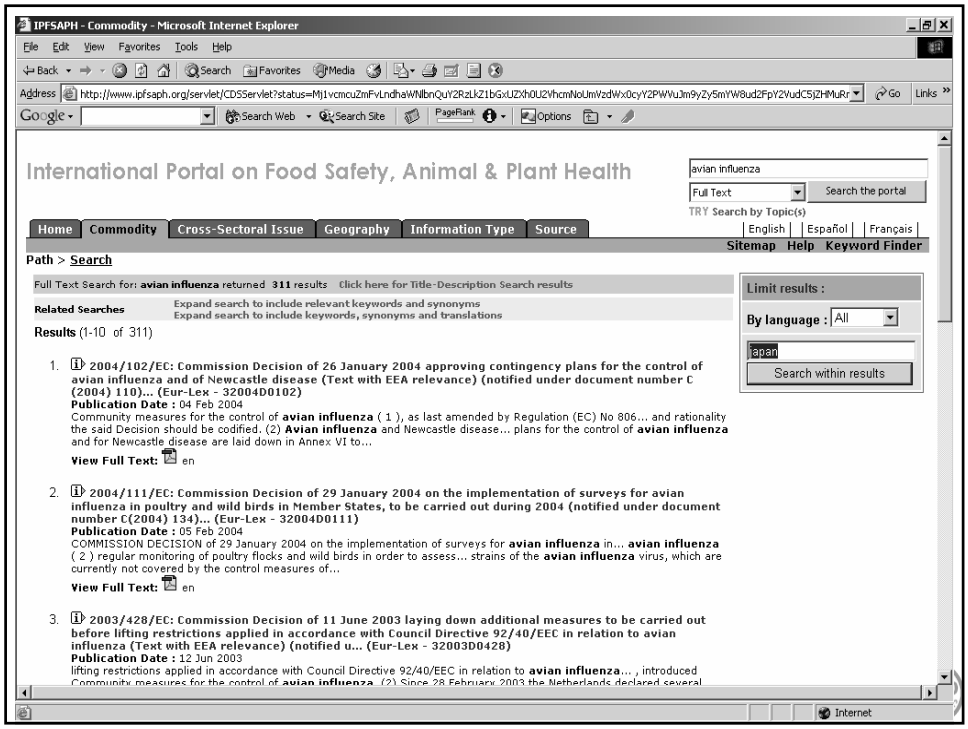
eg: find information on **Avian influenza**

Use refine options

eg: select records mentioning **Japan**




IPFSAPH - Commodity - Microsoft Internet Explorer
International Portal on Food Safety, Animal & Plant Health
avian influenza
Full Text
Search the portal
TRY Search by Topic(s)
Home
Commodity
Cross-Sectoral Issue
Geography
Information Type
Source
English
Español
Français
Sitemap Help Keyword Finder
Path > Search
Full Text Search for: avian influenza returned 311 results Click here for Title-Description Search results
Related Searches
Expand search to include relevant keywords and synonyms
Expand search to include keywords, synonyms and translations
Results (1-10 of 311)
Limit results :
By language : All
Search within results
1. 2004/102/EC: Commission Decision of 26 January 2004 approving contingency plans for the control of avian influenza and of Newcastle disease (Text with EEA relevance) (notified under document number C (2004) 110)... (Eur-Lex - 32004D0102)
Publication Date : 04 Feb 2004
Community measures for the control of avian influenza (1), as last amended by Regulation (EC) No 806... and rationality the said Decision should be codified. (2) Avian influenza and Newcastle disease... plans for the control of avian influenza and for Newcastle disease are laid down in Annex VI to...
View Full Text: en
2. 2004/111/EC: Commission Decision of 29 January 2004 on the implementation of surveys for avian influenza in poultry and wild birds in Member States, to be carried out during 2004 (notified under document number C(2004) 134)... (Eur-Lex - 32004D0111)
Publication Date : 05 Feb 2004
COMMISSION DECISION of 29 January 2004 on the implementation of surveys for avian influenza in... avian influenza (2) regular monitoring of poultry flocks and wild birds in order to assess... strains of the avian influenza virus, which are currently not covered by the control measures of...
View Full Text: en
3. 2003/428/EC: Commission Decision of 11 June 2003 laying down additional measures to be carried out before lifting restrictions applied in accordance with Council Directive 92/40/EEC in relation to avian influenza (Text with EEA relevance) (notified u... (Eur-Lex - 32003D0428)
Publication Date : 12 Jun 2003
lifting restrictions applied in accordance with Council Directive 92/40/EEC in relation to avian influenza... , introduced
Internet


IPFSAPH - Commodity - Microsoft Internet Explorer
International Portal on Food Safety, Animal & Plant Health
avian influenza
Full Text
Search the portal
TRY Search by Topic(s)
Home
Commodity
Cross-Sectoral Issue
Geography
Information Type
Source
English
Español
Français
Sitemap Help Keyword Finder
Path > Search
Full Text Search for: avian influenza returned 311 results Click here for Title-Description Search results
Related Searches
Expand search to include relevant keywords and synonyms
Expand search to include keywords, synonyms and translations
Results (1-10 of 311)
Limit results :
By language : All
japan
Search within results
1. 2004/102/EC: Commission Decision of 26 January 2004 approving contingency plans for the control of avian influenza and of Newcastle disease (Text with EEA relevance) (notified under document number C (2004) 110)... (Eur-Lex - 32004D0102)
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View Full Text: en
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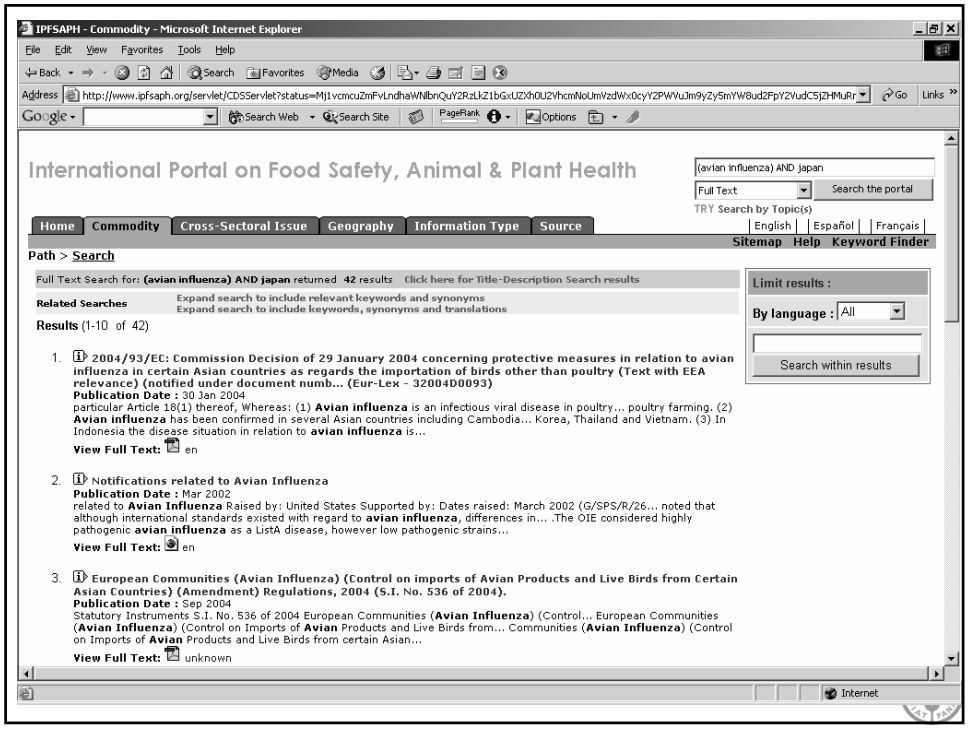
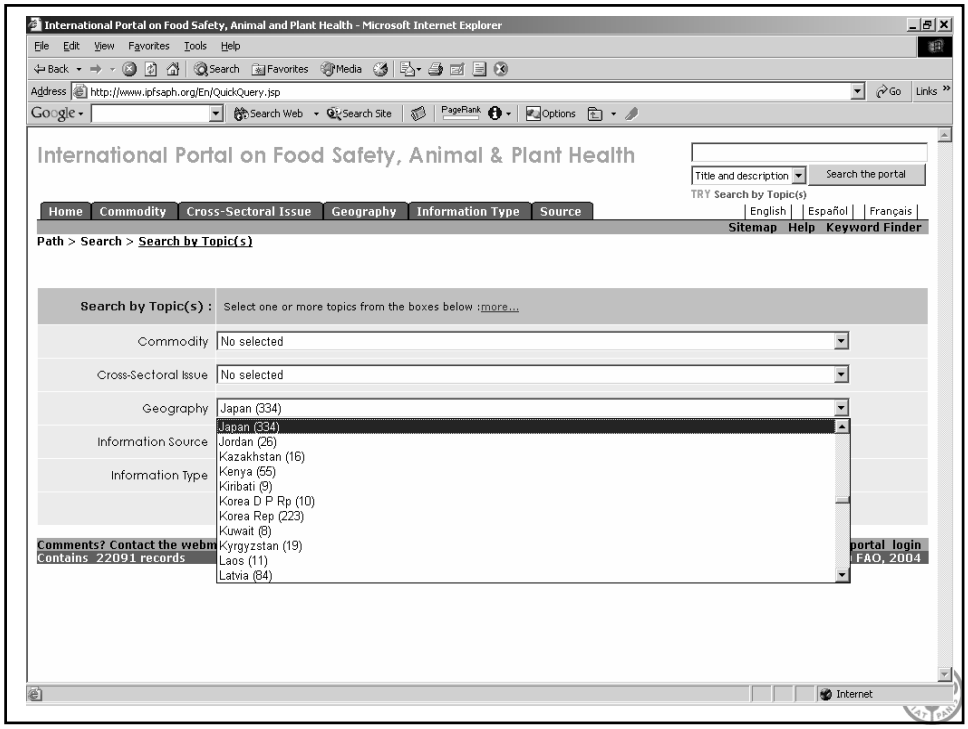


Keyword search

Click search by topic

Select to search for all documents about **<Geog> keyword = Japan**


International Portal on Food Safety, Animal and Plant Health - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://www.ipfsaph.org/En/QuickQuery.jsp
International Portal on Food Safety, Animal & Plant Health
Title and description
Search the portal
TRY Search by Topic(s)
Home
Commodity
Cross-Sectoral Issue
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Sitemap Help Keyword Finder
Path > Search > Search by Topic(s)
Search by Topic(s) :
Select one or more topics from the boxes below :more...
Commodity
No selected
Cross-Sectoral Issue
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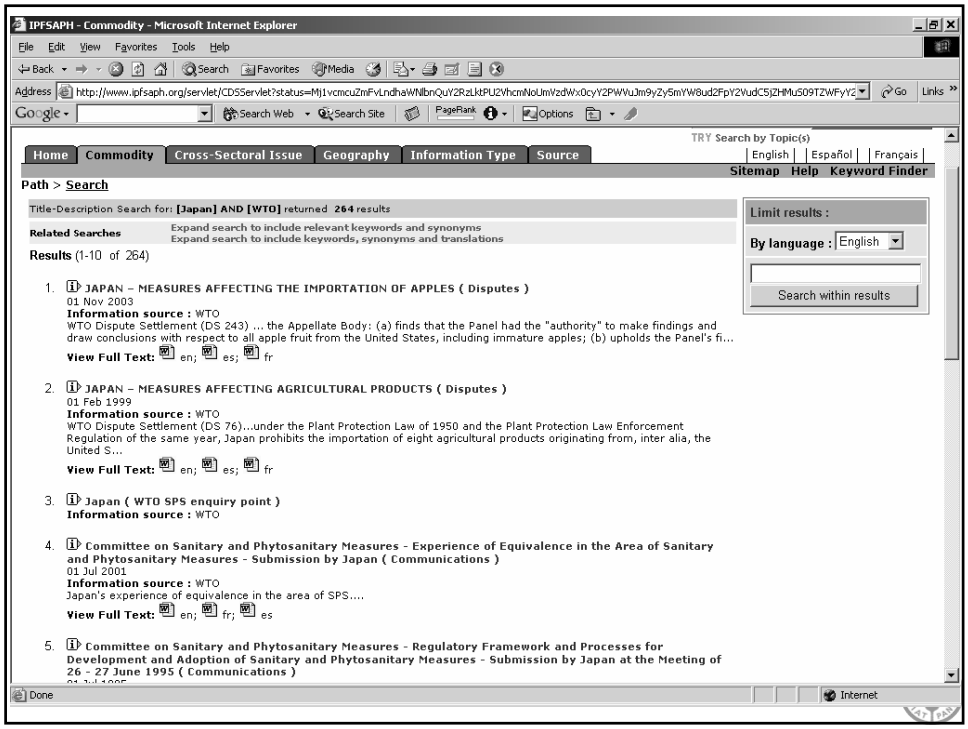
Geography
Japan (334)
Information Source
Information Type
Japan (334)
Jordan (26)
Kazakhstan (16)
Kenya (55)
Kiribati (9)
Korea D P Rp (10)
Korea Rep (223)
Kuwait (8)
Kyrgyzstan (19)
Laos (11)
Latvia (84)
Comments? Contact the webm
portal login
Contains 22091 records
FAO, 2004
Internet


IPFSAPH - Commodity - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://www.ipfsaph.org/servlet/CDSServlet?status=MjIvcmcuZmFvLndhaWNlbnQuY2RzLktPU2VhcmNoUmVzdWx0cyY2PWVuJm9yZySmYW8ud2FpY2VudC5jZHMuS09TZWFyY2
TRY Search by Topic(s)
Home
Commodity
Cross-Sectoral Issue
Geography
Information Type
Source
English | Español | Français
Sitemap Help Keyword Finder
Path > Search
Title-Description Search for: [Japan] AND [WTO] returned 264 results
Related Searches
Expand search to include relevant keywords and synonyms
Expand search to include keywords, synonyms and translations
Results (1-10 of 264)
Limit results :
By language : English
Search within results
1. JAPAN – MEASURES AFFECTING THE IMPORTATION OF APPLES (Disputes)
01 Nov 2003
Information source : WTO
WTO Dispute Settlement (DS 243) ... the Appellate Body: (a) finds that the Panel had the "authority" to make findings and draw conclusions with respect to all apple fruit from the United States, including immature apples; (b) upholds the Panel's fi...
View Full Text: en; es; fr
2. JAPAN – MEASURES AFFECTING AGRICULTURAL PRODUCTS (Disputes)
01 Feb 1999
Information source : WTO
WTO Dispute Settlement (DS 76)...under the Plant Protection Law of 1950 and the Plant Protection Law Enforcement Regulation of the same year, Japan prohibits the importation of eight agricultural products originating from, inter alia, the United S...
View Full Text: en; es; fr
3. Japan (WTO SPS enquiry point)
Information source : WTO
4. Committee on Sanitary and Phytosanitary Measures - Experience of Equivalence in the Area of Sanitary and Phytosanitary Measures - Submission by Japan (Communications)
01 Jul 2001
Information source : WTO
Japan's experience of equivalence in the area of SPS....
View Full Text: en; fr; es
5. Committee on Sanitary and Phytosanitary Measures - Regulatory Framework and Processes for Development and Adoption of Sanitary and Phytosanitary Measures - Submission by Japan at the Meeting of 26 - 27 June 1995 (Communications)
Done
Internet

Usage of the system

quantitative

- webserver logfile analysis (volumetrics)
- application log analysis (click paths, search strings, document downloads)

qualitative

- email queries/helpdesk
- questionnaire/useability testing

Quantitative

- system launched May 2004
- initial usage ~ 3,000 page views a day
- active promotion from 2005 onwards
- subjects searched across whole range of food safety, animal and plant health (current featured topics reflect this)

....

Quantitative

	May	June
Page views/ day	14,300	14,700
Visits/ month	57,400	71,500
visitors	35,500	44,200
visit >1	4,800	5,900

Qualitative

queries from users

- 3-5 per day

- global interest, wide range of topics (heavy metals; commodities; Codex “grey areas”...)

online survey (August-September)

useability testing (50 interviews to date)

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queries from users

- 3-5 per day

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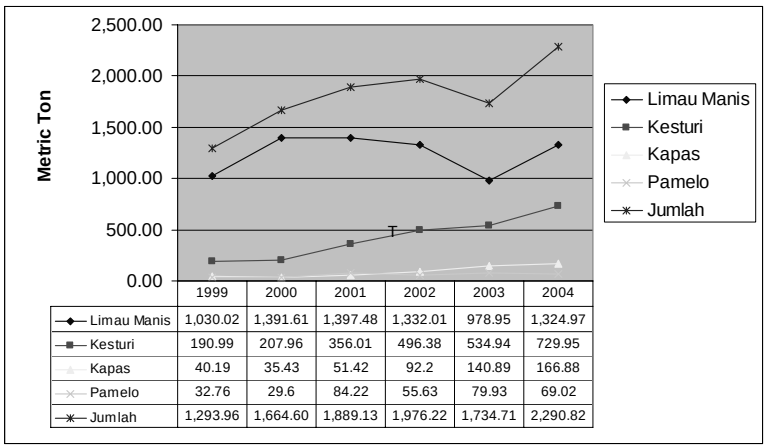
useability testing (50 interviews to date)

CITRUS GREENING AND CITRUS TRISTEZA IN NEGARA BRUNEI DARUSSALAM

- Citrus is one of the most important commodity of fruit industry in Negara Brunei Darussalam.

Trend of Local Citrus Production from 1999 to 2004



	1999	2000	2001	2002	2003	2004
Limau Manis	1,030.02	1,391.61	1,397.48	1,332.01	978.95	1,324.97
Kesturi	190.99	207.96	356.01	496.38	534.94	729.95
Kapas	40.19	35.43	51.42	92.2	140.89	166.88
Pamelo	32.76	29.6	84.22	55.63	79.93	69.02
Jumlah	1,293.96	1,664.60	1,889.13	1,976.22	1,734.71	2,290.82

RESULTS OF DISEASE SURVEILLANCE

- The result of the survey showed that citrus trees were infected by citrus tristeza virus and citrus greening / Huanglongbing.
- Both diseases can be spread by vectors and vegetative propagation.

Disease impact to the citrus plant

- Decrease yield drastically
  - poses major constraint in citrus production
- Trees may die less than 5 years if:
  - Seedlings infected at the age of less than 5 years
  - Poor farm management
  - The trees infected by both diseases
- Trees will survive more than 15 years and can produce high yield more than 10 years with good farm management

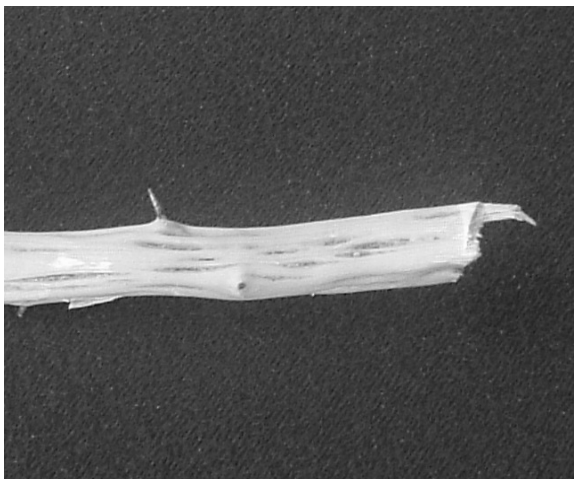
CITRUS TRISTEZA VIRUS

- Caused by Citrus Tristeza Virus and the vectors for this disease are aphids, *Toxoptera citricidus* dan *Aphis gossypii.*

- Infected plants will show symptoms such as yellowing of leaves, wilting, defoliation, stem pitting and die back.

- But the plants that were surveyed were symptomless.

Stem pitting on pomelo



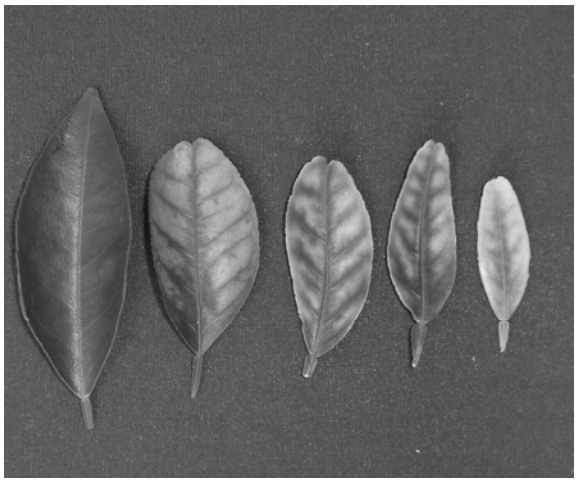
Aphid, *Toxoptera citricidus*

Aphid, *Aphis gossypii*

CITRUS GREENING/ HUANGLONGBING

- Citrus greening is caused by a phloem proteobacterium, *Candidatus Liberobacter asiaticus and spread by* Asiatic citrus psyllid, *Diaphorina citri*.

Greening symptom on the leaves



Greening symptom

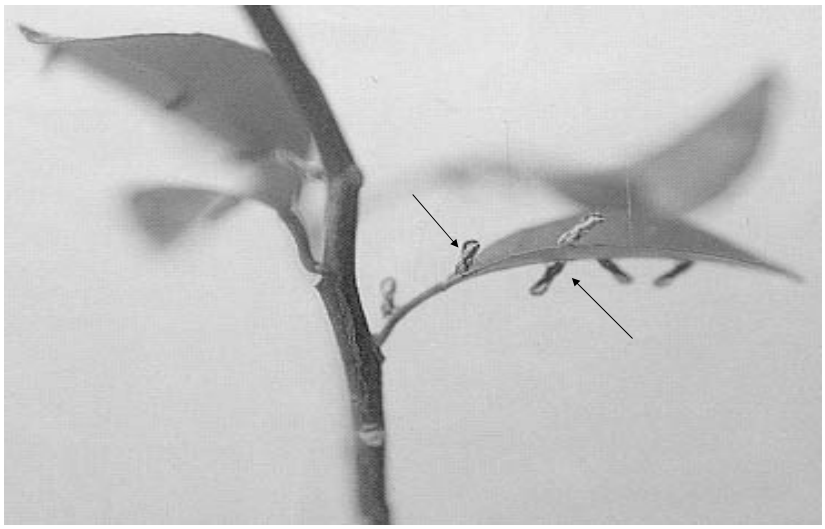
Diseased

Healthy

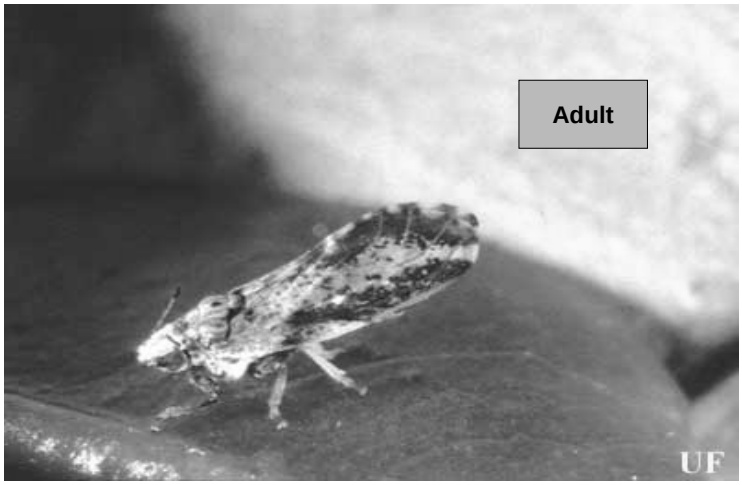
Greening on pomelo leaves

Greening on pomelo leaves

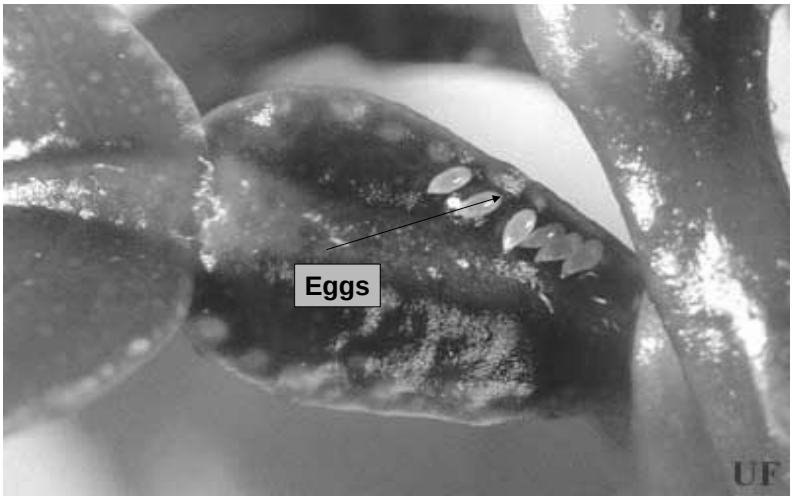
Psyllid, ***Diaphorina citri***



Psyllid, ***Diaphorina citri***



Eggs of ***Diaphorina citri***



Overview of Citrus Greening in ASEAN Countries

- Indonesia
  - 1977, 5 million trees infected
  - 1981, 10.5 million trees died
  - 1985, more than 8 million trees infected, started rehabilitation programme

- Philippines
  - 1962, 7 million trees infected
  - 1971, more than 1 million trees died in 1 province

- Thailand
  - 1980, about 95% of citrus trees were infected in Northern and Eastern parts of Thailand
  - Then the disease spread to Southern parts of Thailand

Action Plan for Control Strategies

Short Term

- Strengthening the plant quarantine
- Planting indigenous fruits campaign
- Control of insect vectors
- Awareness program to farmers and public on Citrus Greening and Citrus Tristeza Virus through fact sheet and seminars
- Conduct case study for disease control using disease-free seedlings from certified nursery

Recommended insecticides for aphids control

Brand Name	Mode of action	Rate for 1 litre of water	Spraying interval (days)	Duration before harvest (days)
Rogor (Dimethoate 38%)	Contact & Stomach Poison	0.6 - 2.0 ml	7	7
Karate 2.5% EC	Contact & Stomach Poison	1 ml	7	7
Sumi-alpha 2.5 EC	Contact & Stomach Poison	1 - 2 ml	7	7
Baythroid 5 EC	Contact & Stomach Poison	1.0 ml	7	7

Recommended insecticide for aphids control

Brand Name	Mode of action	Rate for 1 litre of water	Spraying interval (days)	Duration before harvest (days)
Confidor 200 SL	Contact & Stomach Poison	0.25 - 0.38 ml	7	7
Merit 100 SL	Contact & Stomach Poison	0.5 ml	7	7
Rogor (Dimethoate 38%)	Contact & Stomach Poison	0.6 - 2.0 ml	7	7

Medium Term

- Planting other tree crops near the infected citrus plant
- Identify new area for citrus planting which is at least more than 5 km from infected farms

Long Term

Citrus Rehabilitation Program

- Mild strain cross protection
- Production of disease-free mother plants and seedlings through shoot tip micrografting
- Establishment of disease-free nursery
- Eradication of infected trees
- Management of disease-free orchard

Managing Bio-security Threats:
Indonesian Experience in Handling the Outbreak of Avian Influenza

Avian Influenza Outbreak in Indonesia

Indonesia is a country among those that was affected by highly pathogenic avian influenza (HPAI). According to the latest data published by Ministry of Agriculture of the Republic of Indonesia (MOA), the avian influenza struck in total 18 provinces, including 113 districts and cities. The geographic distribution of AI in Indonesia is described on figure 1.

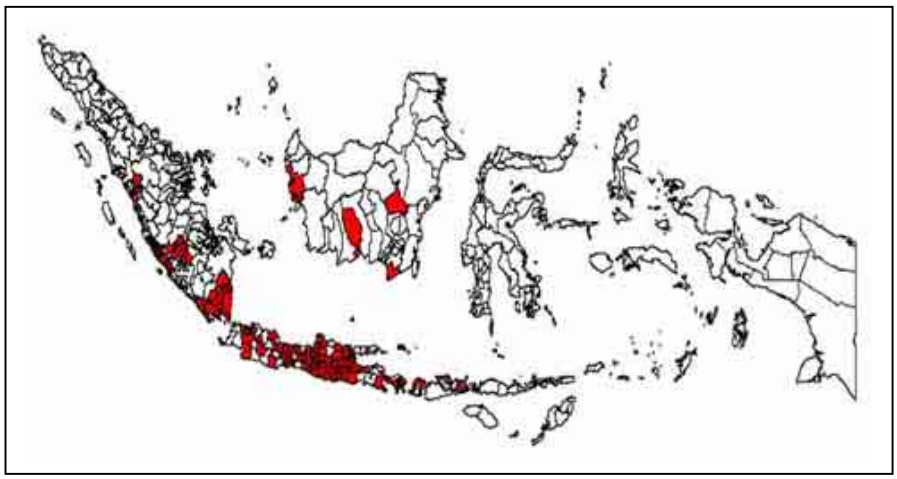


Figure 1. Geographic distribution of Avian Influenza in Indonesia (April 2005)

It is reported that, as of March 2005, the number of poultry deaths had surpassed 16.2 million. Mortalities peaked in January 2004, when MOA recorded nearly 2.6 millions poultry deaths. So far there is no case indicating the spread of AI to human population.

In 2004, MOA estimated the economic loses due to Avian Influenza range between 488 billion rupiah (USD 53 million) if the Government of Indonesia can bring the outbreak under control, and as high as 7.7 trillion rupiah (USD 836 million) should the government fail to do so. According to a 2004 FAO report, the impact of Avian Influenza on poultry sector in Indonesia was as follow:

- Demand for day old chicken in infected regions dropped 57.9 percent for broiler and 40.4 percent for layer chicken
- Demand for livestock feed fell 45 percent for all kinds of poultry food
- Production supply declined 40.7 percent for broiler and 52.6 percent for layer chickens
- Job opportunities plunged by 39.5 percent
- Poultry export dropped from USD 4.9 million in 2004 to only USD 158,000 between January and October 2004.

Control Strategy

In response to the outbreak, the Government of Indonesia has formulated strategies as outlined in Ministry of Agriculture Decree No. 17 of February 2004. Those include the followings:

- Improve bio-security to avoid contact/contamination with infected livestock.
- Improve the early warning system by reporting to MOA any disease outbreak as soon as possible, but no later than 24 hours.
- Enhance monitoring and surveillance in all areas, especially those with high poultry population density and previously hit by AI to facilitate early detection.
- Forestall an endemic by monitoring poultry traffic to prevent the trade in tainted poultry.
- Apply quarantine/isolation of infected livestock.
- Decontaminate or disinfect all materials, tools, vehicles, and anything else related to livestock.
- Implement mass vaccination to all poultry farmers in each area affected location.
- Monitor AI vaccine distribution and use (especially of imported vaccine) in the breeding and commercial farms.
- Coordinate with all relevant stakeholders, including animal quarantine authorities, the public and the local poultry in each area.

The control actions that the GOI had effected in order to fight AI include:

- Establishment of Avian Influenza Crisis Centre at the office of Directorate General Livestock
- Establishment of Task Force of control and eradication of AI
- Request government emergency fund for the control and eradication of AI
- Issued a guidelines on prevention, control and eradication of AI
- Issued a decree of MOA regarding declaration of AI outbreak in Indonesia
- Issued a circular letter dated on 24 February 2004 on obligatory to report any death cases and selective culling on weekly basis
- Issued a circular letter dated on 9 January 2004 on the control of vaccine distribution
- Socialization and campaign of AI and safety of chicken consumption
- Distribution of 32 million doses of vaccines to farmers in infected areas
- Approved 3 (three) local vaccine producers (PT Vaksindo Satwa Nusantara, PT Medion and Pusvetma)
- Approved PT Bio Farma as an impoeter for AI vaccine to fulfil the shortage of vaccine.

Bio-security Improvement

The GOI's program designed to prevent the spread of Avian Influenza between poultry premises and the introduction of new infection to susceptible poultry can be summarized based on the three basic principles of bio-security, i.e., traffic control, isolation, and sanitation.

Traffic control includes the traffic into farm, traffic pattern within farm, and traffic leaving farm. In order to prevent the spread of AI from infected areas to free areas, the Director General of Livestock Production, MOA has issued a circular letter no. 10/PD.610/F/02.05 addressed to all related institutions at both central and local government (provincial and district level), which among others provides a guidance to control the traffic of poultry and its product from and/or into infected areas. Furthermore, to prevent the spread of AI from other infected countries, GOI has

temporarily stopped the import of poultry products from Thailand, China, Vietnam, South Korea, Japan, and Cambodia.

Isolation refers to the confinement of animals within a controlled environment that excludes vectors of diseases. Mechanical transmission of virus by anything that can walk, crawl, or fly from farm to farm should be presumed. Due to the high prevalence of backyard/free range flocks, this principle has not been fully applied particularly among small-scale farms.

Sanitation addresses the disinfection of materials, people and equipment entering the farm and the cleanliness of the personnel on the farm.

In general the level of bio-security application in poultry sector in Indonesia can be described based on the size of the farms:

- Large farms, particularly breeding farms and commercial layer farms have applied strict bio-security procedures
- Some broiler farms have applied strict bio-security procedures
- Backyard farms applied bio-security procedures at very minimum level

In order to assist small-scale farms to improve their bio-security measures, Directorate General of Livestock Production, MOA has distributed guidance book on “the prevention and control of Avian Influenza in Small-scale Farms” to veterinarians working in direct contact with small-scale farmers.

All the strict control strategies carried out by the Ministry of Agriculture and other related agencies, described above, have made the cases of Avian Influenza in Indonesia to be under control, though sporadic cases still occurred in some regions. The monitoring data published by the Indonesian Crisis Centre for Avian Influenza indicates that the spread of Avian Influenza has been successfully isolated from the total coverage of around 18 provinces during 2003 and the first half of 2004 to only some provinces in 2005. During the period of January – March 2005, the cases of Avian Influenza was recorded to occur in only three provinces, i.e. South Sulawesi, West Java and Central Java covering only 10 districts/regencies, with a total poultry death of only 281.730.

MANAGING BIOSECURITY THREATS

in Viet Nam

Presented by Vu Manh Tri

Manager of Monitoring Surveillance Division - PEPQ No I

Plant Protection Department

Ministry of Agriculture & Rural Development

at

Workshop on Building Biosecurity Planning and Surveillance Capacity for APEC Member Economies

August 15-20th 2005 in Kuala Lumpur-Malaysia

1

Introduction

Invasive alien species are serious threats to biosecurity of each economy in particular and the whole world in general. They threaten indigenous species by competing for food, encroaching on domicile, spreading diseases over indigenous organism species, including animals, plants and human. They damage crops, lose ecological environment 's balance, exercise negative influence on biodiversity at national level, international level. Many nations of the world had to spend a lot of money and more effort on preventing and exterminating when the invasive alien species invade their territory

Vietnam, a country is situated in South East of Asia with more than 3,700 kilometers of land border and nearly 3,200 kilometers of coastline and its neighbouring countries are China, Laos, Cambodia, but up to now, having no report that assessed adequately on alien species. Especially, newly introduced species are still having a small quantity. Nevertheless, they are having a latent risk of breaking out to cause great disasters of agricultural production and ecological environmental disaster.

However, in the past period, my economy also had mistake lessons from invade alien species, which bring about bad effects to environment, economy and community health. I would like to report some typical

2

Some typical Invasive Alien Species in Viet Nam

1/ Golden apple snail (pomacea):

This species originates from South America to be entered Vietnam from 1975 with a small number. It begins to become a serious problem from 1989. By 1995, it has caused a lot of serious damages to agricultural production and ecological Environment.The total areas of crop are infested to reach 15,305 hectare. Thousands of rice crop hectare are completely destroyed .

The golden apple snail disaster has directly threatened to assure security for national food program.

The sending on golden apple snail annihilating campaign comes to hundreds of billion VN ®ong. FAO has given a support to Vietnam US $ 250,000 for this campaign .

Now, golden apple snail is in being with a small quantity under integrated pest management (IPM) and they almost have been managing to break out.

3

***2/ Mimosa pigra* :**

The origin of *mimosa pigra* from the Tropical America region. They entered Vietnam from 1981. They are shrub species sprouting density with many hard prickle. The damaging effects of them are to make vegetational cover changing, adverse effect to fauna where they invaded. Very few other crops can grow in the shade of *mimosa pigra* and almost not animal can use them to eat. They obstructed traffic and activity of livestock.

Now, they appear everywhere, especially The National Tram Chim Garden, A famous conserving zone of Vietnam. There, they transgress pasture of *ELeocharis spp.* that are important foods of the red head crane *(Grus antigone sharpii)* and it is a precious rare bird of Vietnam and the world. This is a grave threat to this bird. Furthermore, the red head crane is one of the objects of attracting tourist from domestic and foreign country. The invading of *mimosa* has been indirectly influenced by source of revenue from tourist. Every year , the local government has to spend hundreds of million Vietnam dong on preventing and exterminating them.

4

***3/ Eichhornia crassipes (*water hyacinth)*:**

This invasive Alien species originated from Central America and South America. Water hyacinth was introduced into Vietnam in 1992 and up to now, they have been become a kind of crop commonly all the country. The damaging effect on waterway, obstructed irrigational system, increasing irrigation cost. They shade sunlight infiltrate into the water and reduce oxygen dissolved concentration leading to change composition of water plants and bring about changing population structure of animals and plants. The carrion of water hyacinth when disintegrating causes an infected water supply.

4/ Myocastor coypus:

This invasive alien species originated from south America at the end of the 20th century. They were introduced into Vietnam with economic purpose . They were fed to test at some cities in Vietnam as Hanoi, Hochiminh, Daclac. However, as timely discover their potential harms to agricultural dyke system and people healthy. Mard has promulgated a decision to destroy the whole *myocastor coypus* through out country

5

5/ Tenebrio molitor:

In 1996, this invasive alien species was introduced into to Vietnam by unofficial way with purpose of food birds. Only in short time, they were discovered and right away Plant Protection Department, an office belonging to MARD has combined with organizations which has responsibility for killing them timely.

6/ Lantana camera :

This species originated from Central America. They were introduced into Vietnam from the beginning of the 20th century for the ornamental plant. Now, they are occurred everywhere the whole country. They burns easily and to be regenerated quickly after burning to transgress many other crops. Although, they have not caused any losses but in future they will become an implicit threat.

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Management invasive Alien species organizations system of Viet Nam

1/ Ministry of Agriculture and Rural Development:

a. Plant Protection Department

b. Agriculture Department

c . Department of Animal Health

2/ Ministry of Resources and Environment:

Include: Organizations of manage Environment

Organizations of manage Biodiversity

3/ Ministry of Aquiculture:

Include: Organizations of quarantine aquatic product

4/ General Customs Department.

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Viet Nam promulgate legal documents for managing invasive alien species

1/ Decree of plant protection and quarantine – 2001:

Article 1, prescribe: " Degree include prevention and control of pests harmful to vegetation resources, plant quarantine "

Decree also prescribe :

Article 15 : " Entrust minister of Agriculture and Rural development decide to declare list of plant quarantine subjects of socialist Republic of Vietnam."

Article 27 : " Every offence introduce or spread. Strange pest into Vietnam or among areas in economy is strictly prohibited. "

2/ Decree of veterinary 1993:

Article 1, prescribe: " Degree include methods prevention and control of epidemic diseases to animals, animal quarantine and animal product "

3/ The laws of Protection Environment 1994;

4/ Ordinance of government No 58/2002/N§CP

- Including Regulation on Plant Quarantine , Plant Protection and Pesticide

5/ Decision 58/2001/QD-BNN-Minister of Agriculture and Rural Development

- Promulgate list of plant varieties, livestock is allowed import and is prohibited import.

6/ Join circular No 17/2003/TTLT-BTC- BNN&PTNT-BTS guide inspection supervising, quarantine import- export commodities .

8

7/ Circular No 62/2001/TT-BNN-MARD-guide import export commodities belong to management of speciality

Suggestions:

1/ Building a common strategy of APEC to cope with invasive alien species.
2/ Enhancing human resource development of risk assess and search for invasive alien species of member economy .
3/ Cooperation, sharing information experiences and knowledge together with risk analytic tool based on science and bring explicit and suitable for phytosanitary methods by SPS agreement of WTO.
4/ Building main principle to diagnose and determine, search for invasive Alien species.

Thank you !

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Some Invasive Alience Species into Viet Nam, Method priventation and results

Dr. Le Van Hung
Department of Science and Technology
under
Ministry of Agriculture and Rural Development

Introduction

Article 8(g) of the Convention on Biological Diversity requires countries to *establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental imparts that could affect the conservation and sustainable use of biological diversity taking also into account the risks to health.*

And Article 8 (h) shower prevent import, manage or eradication of Invasive Alience Species, they make threats eco-system, living environment and local species.

In past time, in Viet Nam some Invasive Alience Species have appear. they make very harmful to produce in agriculture and forestry... .for example:

Nematodes *Rhadopholus similis* damage pepper in high mountain in Tay Nguyen, giant sensitive plant *(Mimosa pigra* L.*)*in Tram chim National Garden in the South, golden apple snail (*Pomacea* sp) damage rice everywhere in the my country...

◆ II. Some Invasive Alience Species into Vietnam

1. Eichnoria (*Eichhomia crassipes*), it is into Viet Nam 1902
2. Nutria (*Myocastor coypus*), they were imported to Viet Nam, but now nutria was eradicated.
3. Worm-hole (*Trogoderma granarium*), they have high potential into Viet Nam, but now it is not yet in my country, because we usually apply quarantine methods in border.
4. Golden apple snail (*Pomacea* sp), they were imported into Viet Nam 1975 amd 1989, now they have appeared everywhere in the my country.

5. Giant sensitive plant *(Mimosa pigra* L*)* it is into Viet Nam about in mid XX century in some places and now it has appeared everywhere, but special in Tram chim National Garden in the South.

6. Insect *(Brontispa longissima),* periwinkle were imported into Viet Nam, but it take with *Brontispa longissima* and damage coconut in Viet Nam in 1999.

7. Fungus (*Ephelis oryzae...*), rice seed were imported from China to Vietnam it was taken with Rice joss sticks disease fungus in to Viet Nam in 2001, but it was eradicated.

III. The national legislation provide for emergency action

The national legislation provide for emergency action following the introduction of a quarantine pest. There are:

- Ordinance on Plant Protection and Quarantine No: 36/2001/PL-UBTVQH10
- The List of Plant quarantine Pests of SR of Viet Nam (enacted by decision 117/2000/QD/BNN-BVTV deted November 20th, 2000 of MARD of Viet nam)
- **Some documents and guidelines for quarantine ...**

IV. Management Methods and control of Invasive Alience Species in Viet Nam

1. General methods

- Improvement ability, skill of staff and knowledge of farmers.

- Priority of prevent method of Invasive Alience Species into Vietnam.

- Strengthen limit methods Invasive Alience Species break into Vietnam

- Assessment pest risk of Invasive Alience Species before import to Vietnam

- Encourage and method implement of control and eradication of Invasive Alience Species.

- Improvement Framework and international relationship for preventing controlling and eradicating Invasive Alience Species.

2. Prevent methods

- Strengthen of the legislation and regulation effective enforcement of quarantine of botanical and animal. This methods ensure scientific, equitable and transparent characteristic

- In the important places, where Invasive Alience Species can be into Vietnam, we need manage and survey in period in 1, 2, 3 months, it depend on potential of risk one of Invasive Alience Species.

3. Control and eradication methods

- Handwork methods

- Chemical methods

- Biological methods

- Integrated methods of above (chemical, biological...)

- Early use method for controlling and eradicating Invasive Alience Species.

V. Some Result about control Invasive Alience Species

1. Control golden apple snail (*Pomacea* sp)

- Golden apple snails(GASs) are appear everywhere in the my country and damage young rice, that why we find out methods for controlling them.

+ Collect them by hand (GASs and egg) when average diameter of snail is 3cm and density of GASs is 0,65 snail/m2 at rice with 15 days .

+ Using duck when stem of rice is strong.

+ Using botanical pesticide and other when average diameter of snail is 3cm and density of GASs is 2,2 snail/m2 at rice with 15 days. Some results can be find out:

Some of botanical plants in Viet Nam can produce botanical products for controling GASs, for example CB- 03, CE-02, CH- 01...

Level of water when use botanical pesticide in the field, influence on effect of CE-02 ... is highest at 5cm of water level>dry land and 15cm..

Dose of CE-02 with 10 kg/ha after 1day effect 63,33% and 3 days 100% this dose no effect on fish; with 15 kg/ ha after 1 day effect 100% days this dose effect on fish after 1 day 26,66 %, 3 days 86,66%.

2. Control giant sensitive plant *(Mimosa pigra* L*.)*

Giant sensitive plant is appear very wide in Viet nam, but in Tram chim national Garden, *Mimosa pigra* L .growth very fast and it invaded local plants.

Situation of *Mimosa pigra* L.invaded local plant in Tram chim can be shower in the table 1

table 1: Situation of *Mimosa pigra* L.invaded local plant in Tram chim

	Time	Area was invaded (ha)	Time surveying
1	1984-1985	Small	
2	1999	148	To Nov. 1999
3	2000	490	To May 2000
4	2001	958	To July 2001
5	2002	1,900	To July 2002
6	2003	2,200	To July 2003
7	2004-2005	4,000	Forecast

Data show in the table 1, we know that invaded ability of *Mimosa pigra* L is very high, after 20 year area of *Mimosa pigra* L is 4000 ha/7,588 ha (about 52.7%)

That why, we find out methods for controlling *Mimosa pigra* L is necessary , some methods were applied for controlling *Mimosa pigra* L :

Pull up and cut *Mimosa pigra* L when plants are young

Burn, but it is not good with condition in Viet Nam

Use Glyphosate for destroyed *Mimosa pigra* L, but use Glyphosate before wet season 2 moths

Combination between cutting method with herbicide Ally 20DE for controlling young and old plant.

Combination between cuting method before 10days and flout out

Study and import *Carmenta mimosae* , multiply them and release in the field of *Mimosa pigra* L.

3. Control insect *(Brontispa longissima)*

Periwinkle were imported into Viet Nam, but it take with *Brontispa longissima* and damage coconut in Viet Nam in 1999. Now , to Aug.2001, by MARD Insects *(Brontispa longissima)* appeared at 21/21 provinces in the South of Viet Nam and 1,417,141 coconut wewe damaged . The end of 2002 Insects *(Brontispa longissima)* appeared in 30/30 provinces in the South, 9,359,403 coconut were damaged. Some methods were used, chemical method was applied, it have effective and control Insects *(Brontispa longissima)* on 4,154,764 coconuts, but sprinkle is very different when use and reduce of level of pesticide is high:

Table 2. Result Rehabilitated coconut when released *Asecodes hispinarum* (May 2005)

	Provinces	Released time	Number of rehabilitated coconut(%)
1	Ca mau	27th Sep. 2004	34
2	Soc trang	13th Dec. 2004	15
3	Can tho	17th Sep. 2004	64
4	An giang	30th Jua.2004	45
5	Kien giang	23th Aug 2004	32
6	Dong thap	16th Dec. 2004	42
7	Vinh long	1st Ap. 2004	76
8	Tra vinh	3th Sep. 2004	94
9	Tien giang	1st Mar. 2004	78
10	Ben tre	14th Aug 2003	81
11	Long an	30th Aug. 2004	60
12	Ho Chi Minh city	13th Aug. 2004	51
13	Dong nai	10th June 2004	55
14	Binh duong	Oct. 2004	33
15	Binh thuan	3th Nov 2004	80

VI. Conclusion

Some Invasive Alience Species into Viet Nam bring about serious consequences and damage produce, environment and economy (risk).

We find out some methods for controlling and prevent Invasive Alience Species.

Thank you for your attention.

SINGAPORE RECOMMENDATIONS TO APEC

Recommendation 1
Name : Mr. Ong Kheng Ho

1. Term 1A
   Could we look at compiling a list of invasive that has affected the region (APEC) together with applied measures for their eradication and prevention?

2. To compile an accessible list of common and potential invasive pest list and associate mitigation measures for APEC Economies to carry out Biosecurity Planning

3. To set up Guidelines for Biosecurity Planning
4. To host on a suitable web-site e-learning training programmes & workshop proceedings for SPS Building Activities to multiply training possibilities.

5. To compile a list of institutions or persons available in pest identification for the APEC Region.

RECOMMENDATIONS TO APEC

Recommendation 2
Suggestion – Regional information center for the APEC member countries
ASEAN- in the future when member contries are ready with their pest list the ASEAN member countries can set up an information center to be hosted by one of the countries.

THAILAND RECOMMENDATIONS TO APEC
Name: Mr. Woothisak
Recommendation 3

- What should be done after the workshop in terms of Biosecurity Planning in order to follow up the Biosecurity program among APEC member

RECOMMENDATIONS TO APEC

Recommendation 4
Well planned actions of this workshop are highly required to assist APEC member economies develop an effective Bio-security Planning for both individual and the region. In this regards, it is experted that APEC not confine wider actions, such as the followings:

- Providing technical assistance and financial support to those APEC countries whose bio-security system is still left behind
- Developing networking system to enable an effective information and experience exchange among APEC member countries.

- Facilitating APEC member countries to get better access to international funding agencies having interest on this issue.
- Establishing a 'working group' on Bio-security at both national and regional level. The WG should have a regular meeting for sharing information and experience as well as develop a monitoring and evaluation of the Bio-security planning that have been established in each country.

MALAYSIA RECOMMENDATIONS TO APEC
Recommendation 5

1. To continue to provide funding for the following :
    i. Follow up workshops to create awareness, hands-on programs on all aspects of biosecurity for relevant parties.
    ii. Training for capacity building especially for taxonomy and curation and preservation of specimens.

2. To provide a directory of experts in all disciplines related to biosecurity
3. To coordinate linkages of on-line data bases
4. To establish a regional portal on food safety, animal and plant health.

RECOMMENDATIONS TO APEC
Recommendation

The international portal zooming on regional basis provide an interesting elevation of further capturing the ICT to enhance networking capabilities and developing capacity to the regional economies. The idea mooted by Mr. Mike should be taken seriously, both by APEC or country economies to compliment the existing 'nets'. It may be a right path for a particular country as the initiatives to host the portal.

CHINA RECOMMENDATIONS TO APEC

Recommendation

1. APEC Workshop on Management of IAS

- To share the success experience and knowledge on eradication, mitigation and control of invaded plant pests.
- To develop effective control methods for newly invaded plant pests
- When : October or November 2006, field trip can be arranged to demonstrate the control effects.
- Host : select an APEC member, who has success cases' Researches on IAS.

2. Develop an International Cooperation Project Proposal on Prevention management of IAS in Agriculture Forestry
    - Targets can be considered on : Alligator Weed, Water hyacinth, Cofton Weed, Imported Red Ant, Golden Apple Snail, Coconut Beetle

- Seek international donors; or/ to get funding support from their own domestic funding sources.

PHILIPPINES RECOMMENDATIONS TO APEC

1. Establishment of a hub for APEC member countries or countries in the region that will serve or repository for all data/ information on pest list, biosecurity plans, invasive alien species and their management.
2. Come up with a document on a detailed (step-wise procedure /process) biosecurity planning which would discuss/present all the steps involved in conducting / doing the plan like identifying threats; element of biosecurity, surveillance, etc. This would give member countries especially developing countries a clear understanding on how to do biosecurity planning. Conduct a hands on workshop on how to do planning.
3. Training for NPPOs on identifying threats, establishment the pest list, surveillance and other elements of biosecurity.

BIOSECURITY RECOMMENDATIONS TO APEC

Workshops delegates noted the disparity between developed and developing economies in expanding exports of agricultural commodities. The problem arise because many developing economies cannot provide an adequate descriptor of the health (ps…) status of their agricultural industries. {24 consequently follows that} developing economies will also exp…. Difficulties in detecting and identifying incursion of new exotic pest { ……} that have the potential to further limit / constrain trading opportunities.

Workshops delegates recommend that the ATCWG secretariat advise the sum of the disparity in trading opportunities {between developed and developing economies} and the under lying reason for this. Further workshops delegates recommend that the ATCWG of the underlying reason for this disparity { in trading opportunities) noting that deficiencies in plant health infras… in developing economies expose these economies of the ….. of introducing serious exotic plant pest that will …. Constrain / limit trading opportunities.