PLANT QUARANTINE AND RISK MANAGEMENT

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ABSTRACT

The plant quarantine system, which is an integral part of risk reduction efforts to protect plant resources, will be presented, followed by a discussion of improvement ideas for possible further collaboration with the research community. Fundamental to the whole plant quarantine issue is pest risk analysis, for which international standards provide guidelines, and countries add their own perspectives according to the situation and within the national legal framework. Japan, like other countries, has developed its own pest risk analysis guidelines. Information on pest distribution and detection as well as revisions in trade partners' regulations are regularly collected through various sources, based on which immediate consideration is made and pest risk analysis is conducted when necessary. Based on pest risk analysis, the plant quarantine legislative scheme has been continuously developed, which is the legal basis to support various regulative activities, such as import and export inspections at ports and airports, as well as pest surveillance throughout the country, among others. In order to strengthen the effectiveness, collaborative efforts are made between national authorities such as with Customs, and also with trade partner countries regionally and internationally. Particular importance is placed on identification of how certain pests have been introduced as well as development and establishment of pest control methods in emergencies. Regulative actions are essential to protect plants against harmful pests, for which research has been also playing important roles to support them. Plant quarantine can be further improved against the increasing pest risks, through regional/international collaboration and with emerging technologies and innovative approach.

Plant Quarantine and Risk Management

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Yukio YOKOI
(ex-IPPC Secretary, ex-Director of PQ research center)

Plant Quarantine: century-long efforts since 1914

PQ inspection in 1920's

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National Plant Protection Organization (NPPO)

Ministry of Agriculture, Forestry and Fisheries (MAFF)

NPPO

Plant Protection Div.

- bilateral and multilateral issues, such as IPPC/ISPM
- international cooperation
- preventing establishment or spread of pests
- legislative revision
- info collection and analysis

Plant Protection Stations

- import/export inspection/certification
- Surveillance, Outbreak management
- R & D, PRA

Plant Products Safety Division — Pesticides Management

47 Prefectural governments (Pest Control Stations)

- Surveillance
- Outbreak management
- Pest Control

Plant Quarantine

Info search
Risk analysis
Research

Seed inspection
Import PQ
Pest Surveillance
Emergency Controls
Movement restriction
Export PQ

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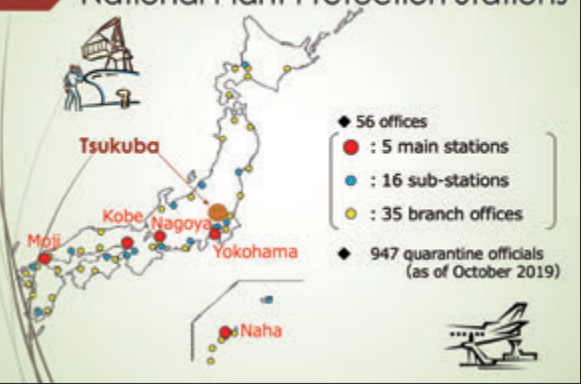
National Plant Protection Stations



- 56 offices
  - : 5 main stations
  - : 16 sub-stations
  - : 35 branch offices
- 947 quarantine officials (as of October 2019)

Plant Quarantine in Japan

In peace:	On detection alert:
• risk analysis in general	• specific risk analysis
• global info search	• Specific info search
• border inspection	• border inspection (enhanced)
• field surveillance	• surveillance density adjusted
...and more	• notification to & consultations with trade partners
	• emergency controls
	• legislative revision if needed

Pests of particular importance to Japan

Medfly & Oriental fruit fly

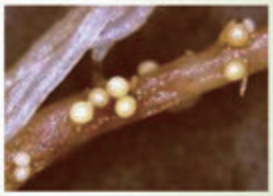
Pests of particular importance to Japan

Sweet potato weevil

Codling Moth

Pests of particular importance to Japan

Fire Blight



Potato cyst nematode

Challenges

- Availability (pets & relevant info): no actual presence
- Increase in **risk** (of pest introduction)
  - Global faster movement (trade volume, travelers)
  - Climate change (extreme weather incidents)
    e.g. fruit flies carried by typhoons
- Increase in **complexity**
  - Divergent paths: post, net-shopping, sea-containers, ...
- **Environment** for pest distribution
  - Climate change (shift of pest-favor conditions)

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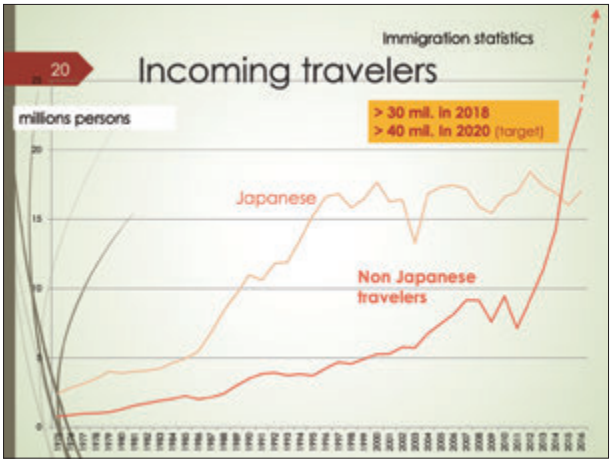
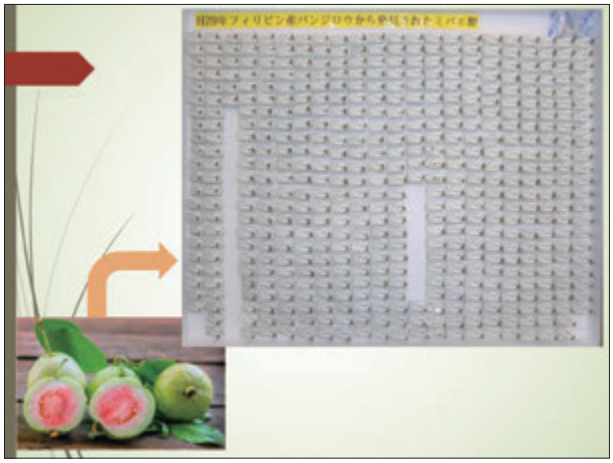
Incoming travelers

Immigration statistics





Collaboration efforts in place

- Among border control agencies
- With trade partners
- Regionally and internationally
  - IPPC: strategy, standards, implementation, ...
  - IYPH
  - Technical cooperation
- Research community (G20MACS)

Next steps: regulative actions - 1

- Strategic **awareness** raising
  - Timely info provision
  - Regional and/or international collaboration
- More effective and efficient **controls**
  - Legislation to allow swift actions

Next steps: regulative actions - 2

- Risk analysis with **emerging pests**
  - Simulation, big data use, focus on specific importance ...
- Strengthened regional & international **collaboration**
  - Semi-real-time pest info sharing
  - Pest identification
  - Pest control info, tools, technology

Next steps: with innovative ideas

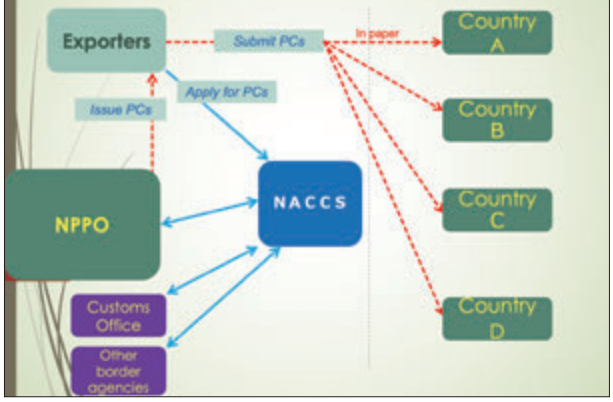
- Strengthened **inspection**
  - AI with big data use
  - Detection sensor technology
- Strengthened **surveillance**
  - Drone
  - Surveillance sensor technology
  - traps with AI, IoT, ...

Monitoring survey for fruit flies

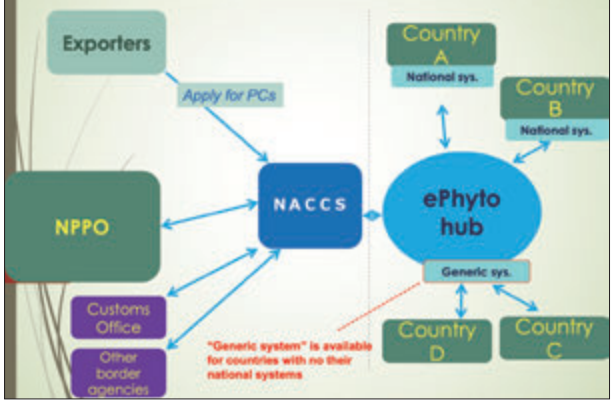
Collection of fruits from wild host plant

Monitoring survey for fruit flies

Current PC cycle ...



When ePhyto **hub** is fully in use...



Conclusions

- Various efforts being made for plant health
- Introduction risk of plant pests in increase
- Needs of further strengthened collaboration
- Potentials for innovative approach