Primer on
Pest Risk Analysis

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Why is the international regulatory framework for plant health important to me?

In this presentation ..

- What is risk
- The reason/objectives for/components of ***Risk Analysis***
- ***Pest Risk Analysis***
  - IPPC definition
  - Who, when, why, how
  - “types” of PRA
- Conclusions/parting thoughts

A definition of risk

- **Risk** is the **likelihood** of bad thing happening and how bad the **consequences** of this bad thing might be
- **Multiplicative relationship between the 2**

Why do Risk Analysis?

Before you can manage something, you must be able to **measure** how bad it is

Measuring tape photo\ by user mihow, FreeImages.com

What happens to the risk if …

- **likelihood** of the bad thing happening is LOW or NEGLIGIBLE?
- **consequences** of the bad thing LOW or NEGLIGIBLE?

Risk Analysis objectives

- Increased understanding/agreement
- Promote dialogue and transparency
- Share resources, including information
- Identify **uncertainty** and research needs
- Make better decisions!

Three components of Risk Analysis…

What is Pest Risk Analysis - PRA?

The process of evaluating biological or other scientific and economic evidence to determine whether an organism is a pest, whether it should be regulated, and the strength of any phytosanitary measures to be taken against it

ISPM No. 5

Expertise needed for PRA

- Biology
  - Entomology
  - Plant Pathology
  - Botany
  - Ecology
- Epidemiology
- Economics
- Statistics
- Agricultural practices

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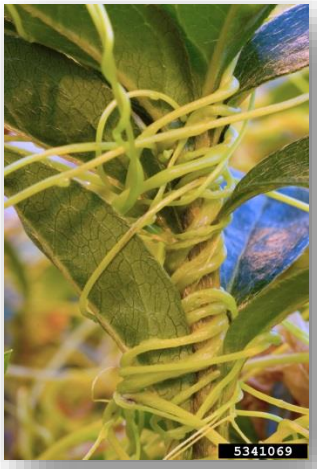
In plant health …

.. we are concerned about the **introduction** (entry and establishment) and **spread** of plant pests





Left to right: Japanese dodder (*Cuscuta japonica*) photo by Barry Rice, sarracenia.com, Bugwood.org. Tubers infected with zebra chip disease photo by Joseph Munyaneza, Flickr.com/photos/usdagov. Adult citrus root weevil (*Diaprepes* sp.) photo by Keith Weller, Flickr.com/photos/usdagov. Juvenile root-knot nematode (*Meloidogyne incognita*) photo by William Wergin and Richard Sayre, colorized by Stephen Ausmus, Flickr.com/photos/usdagov.

Regulatory agencies and PRA

PRA is used by National Plant Protection Organizations (NPPOs) as **technical justification** for phytosanitary measures

A PRA provides the **scientific and technical** framework for regulatory actions that may be taken on quarantine plant pests

Griffin slide on .. Big concepts

- **SPS:**
  - Phytosanitary measures (SPS)
  - Appropriate level of protection (SPS)
- **IPPC:**
  - Strength of measures (IPPC)
  - Least restrictive measures (IPPC)

Who conducts PRA?

- NPPO of the importing country
- NPPO of the exporting country
- Private sector
- Contractor

When is PRA a good idea?

- New pest
- Commodity import (or export requests)

- Policy review or revision
- Regulatory justification
- Operational evaluation
- Trade dispute

Why do we do PRA?

PRAs provide guidance …

- **Risks related to trade**
  - Import or export of organism(s) or product(s)
- **Risks related to domestic issues**
  - Management programs beginning, ending or changing direction
  - Evaluation of different control strategies

Why do we do PRA?

Provide guidance or justification when a decision needs to be made

- **Risks related to introduction or spread**
  - Change in regulations
  - Change in recommendations
  - Emerging issues
- **Resource allocation**

How do we do PRA?

- Do it ourselves
- Develop jointly or harmonize
- Multi-agency cooperation
- Government – industry cooperation

- Create a new document
- Modify an existing analysis
- **Extract from a standard – ISPMs No. 2, 11, 21**

Organism PRA

- Basic analysis
- Organism associated with host(s) - apples
- Organism per se - biocontrol agent
- Data sheet
- Pathway or programmatic study

When might you do an organism PRA?

- Imminent threat or new detection
  - Action/No Action
  - Pathways for introduction and spread
  - Strength of measures
  - Efficacy of measures
- Regulatory evaluation
- Programmatic evaluation
- Export issue

Pathway PRA

Pathway - any means that allows the entry or spread of a pest

ISPM No. 5

- Natural
- Human-assisted
  - Plants and plant products - p4p, fruits and vegetables, solid wood packing material
  - Other commodities and cargo - vehicles
  - Conveyances - sea containers, e-commerce
  - Area - Caribbean, Canadian border
- Usually for multiple pests

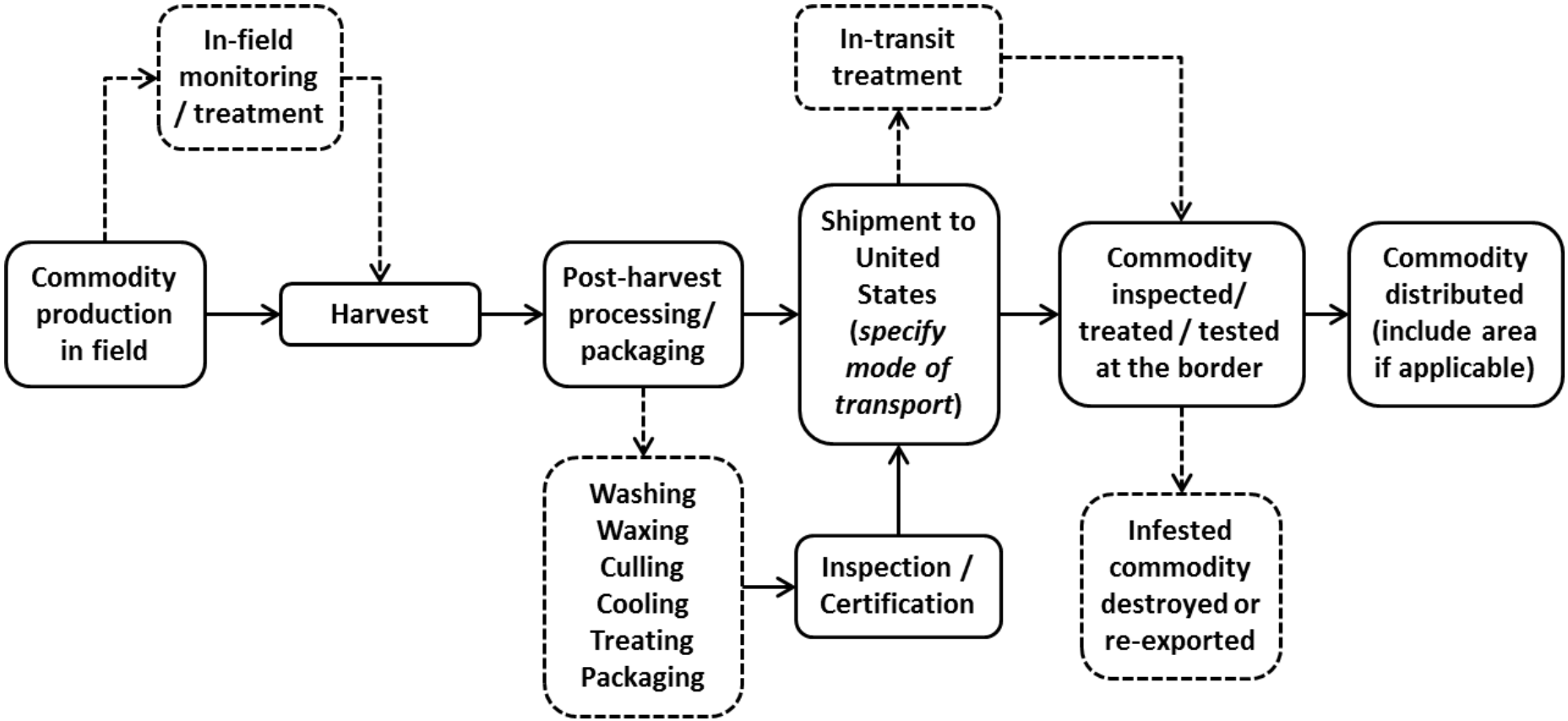
When might you do a pathway PRA?

- Epidemiology or spread studies – where is the pest(s) going?
- Trace-back – where did the pest(s) come from?
- Pathway comparisons or ranking studies – which pathway is worse?
- Evaluation of programs, operations or regulations
- **Commodity import PRA**

Commodity import PRA

- One commodity, multiple pests
- Associated with specific market access
- Often uses template, guide, or checklist
- May be geographically limited or global

Commodity import PRA pathway diagram



Export PRA

- Done to
  - Facilitate exports from your country
  - Facilitate dialogue with a trading partner
- Usually only “specific pieces” of a PRA– pest list

Other applications of PRA

Ranking, rating, or categorizing

- Pests for programs
- Programs for resources
- Commodities for risk

What makes a good PRA?

- Unbiased treatment of evidence
- “Transparent” – sources, assumptions
- Well-organized and easy to read
- Links evidence to conclusions
- Describes uncertainty

What is uncertainty?

Fundamental component of risk because our knowledge of the factors contributing to risk is rarely complete

Uncertainty and PRA

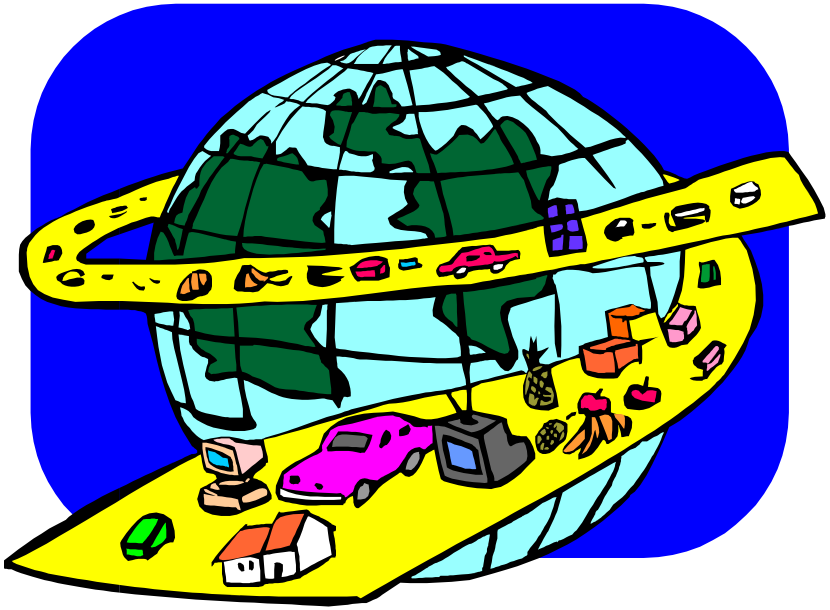
- A key component of any risk analysis is **identifying** uncertainty
- A key component of decision-making is **considering** uncertainty

Things to remember…

Anyone can prepare a PRA, but when conducting an import PRA within the SPS framework, the judgments regarding acceptable risk and the strength of measures are the responsibility of the NPPO in the **importing** country

Things to remember…

The **exporting** country is in the best position to provide data regarding the commodity and pests in that country



Tying PRA to the regulatory framework

- Minimum requirements for PRA in SPS/IPPC framework are easily met
- Without PRA, there cannot be meaningful technical dialogue
- Lack of information is not an excuse for not doing a PRA

Gracias por su atención!