Which risk assessment for decision-makers?

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Helen Harman

Plants and Pathways Risk Assessment
Regulation and Assurance, Ministry for Primary Industries
Wellington, New Zealand

Which risk assessment for decision-makers?

- A range of risk assessment types
- Qualitative to quantitative

What is pest risk assessment?

- The evaluation of the probability of the introduction and spread of a pest and the magnitude of the associated potential economic consequences [IPPC – ISPM5]

- A process to measure the level and nature of biosecurity risk posed by an organism [MPI Procedures, 2006]
    - all values defined under the Biosecurity Act (1993), “to the extent necessary”

What do decision-makers need?

- Information that allows a robust and transparent management decision
- Depends on risk management question
- Commissioning and scoping are key

Risk assessment options

Examples:

- Multi-pathway PRA
- Pathway specific PRA
- Regulatory status assessment
- Grouped assessment
- Spatial risk assessment
- Emerging risk assessment

Multi-pathway PRA

- Important pests and pathogens with good information available
- Comprehensive information on pest or pathogen is of interest to many groups in MPI, and for some years
    - Brown marmorated stink bug (*Halyomorpha halys*)

Pathway specific PRA

- Important pests and pathogens with good information available
- Potential candidates for targeted or specific measures on a particular import health standard
    - Spotted wing drosophila (*Drosophila suzukii*)
    - '*Candidatus* Liberibacter solanaceaerum' on carrot seed

Regulatory status assessment

- Information required is whether pest or pathogen meets the IPPC criteria for a quarantine pest for New Zealand

    - *Apple stem grooving virus* on kiwifruit (*Actinidia*)

Grouped assessment

- A number of species with similar traits
- Individual species often related but may not be, e.g., hitchhikers
- Usually one or a few species in detail with further species compared
    - E.g., PRA for armoured scales on fresh produce

Spatial risk assessment

- Important pests and pathogens with good information available
- Useful where the critical question for the management decision is the likelihood of establishment or potential distribution
    - E.g., *Phytophthora palmivora* (in *Actinidia* IRA)

Emerging risk assessment

- Rapid risk assessment for a specific pest or pathogen
- Changes in levels of risk
- Focus on whether new information received will change effectiveness of current risk management measures

Actinidia plants for planting IRA

- Multiple levels of risk assessment
- Related to risk management decisions
  - Regulatory decisions = main issue
    - Several viruses, e.g., *Apple stem grooving virus*
  - Quantitative elements
    - *Phytophthora palmivora* climate modelling

'*Candidatus* Liberibacter solanacearum'

Lso haplotypes:

- ERS – rapid risk assessment
  - haplotypes, countries, seed transmission?
- Pathway specific PRA
  - carrot seed
- Regulatory status risk assessment
  - sub-specific level (carrot, potato)

Citrus nursery stock PRAs

- Do impacts of some organisms warrant specific tests in post-entry quarantine?

Summary

- To be effective, a risk assessment must measure risk to the extent necessary for the decision-maker to make a robust and transparent decision on risk management

- Different types of risk assessment can be used depending on what is needed for the decision

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