



# Pest Risk Analysis (PRA)

## Stage 2: Pest Risk Assessment





# Step 1: Pest Categorization



Pest Risk Analysis (PRA) Training





# Stages

- Stage 1: Initiation
- **Stage 2: Pest Risk Assessment**
  - **Step 1: Pest Categorization**
  - Step 2: Assessment of the Probability of Introduction and Spread
  - Step 3: Impacts
  - Step 4: Overall Assessment of Risk
  - Step 5: Uncertainty
- Stage 3: Pest Risk Management







# Pest Categorization

- The process for determining whether a pest has or has not the characteristics of a quarantine pest or those of a regulated non-quarantine pest



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# Pest Categorization

- Quick assessment (elements of a full assessment but done in less detail)
- Determines whether a PRA for a given pest should continue
- Provides an opportunity to eliminate organisms from the process before a full PRA is undertaken
- Requires relatively little information





# Pest Categorization



- Does the pest meet the criteria for a quarantine pest?
- What is the potential for the pest to be associated with the commodity or pathway?





# Pest Categorization

- What is the potential impact of the pest?
- How likely is introduction and establishment of the pest if no mitigation measures are applied to the pathway(s)?





# Quarantine Pest

- A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled [ISPM No. 5, 2006]







# Elements of Categorization

The elements that will be considered for each pest in the process

- Identity
- Presence/absence in PRA area
- Regulatory status
- Potential for establishment and spread
- Potential for economic consequences



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# Identity

- Taxonomic identification
  - Most common unit is species (use of higher or lower levels should be justified)
  - Must be clearly defined
    - Note relationships with other quarantine and non-quarantine pests
    - Note any controversy or confusion
    - Note synonyms
  - Vectors may also be considered pests





# Elements of Categorization

- Identity
- **Presence/absence in PRA area**
- Regulatory status
- Potential for establishment and spread
- Potential for economic consequences





## Presence or Absence in PRA Area

- Quarantine pest: “A pest of potential economic importance to the area endangered thereby **and not yet present there, or present but not widely distributed and being officially controlled**” [ISPM No. 5,]







## Presence or Absence in PRA Area

- Critical in determination of status as quarantine pest
- Necessary to determine if pest is either:
  - Absent; or
  - Present and not widely distributed; or
  - Present and widely distributed



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# Elements of Categorization

- Identity
- Presence/absence in PRA area
- **Regulatory status**
- Potential for establishment and spread
- Potential for economic consequences





# Regulatory Status

- Quarantine pest: “A pest of potential economic importance to the area endangered thereby and not yet present there, or **present but not widely distributed and being officially controlled**” [ISPM No. 5]





# Regulatory Status

- Official control:

“The **active enforcement** of mandatory phytosanitary regulations and the application of **mandatory** phytosanitary procedures with the objective of eradication or containment of quarantine pests or for the management of regulated non-quarantine pests” [ISPM No. 5,]



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# Regulatory Status

- Official control includes:
  - eradication and/or containment in the infested area(s)
  - surveillance in the endangered area(s)
  - measures related to controls on movement into and within the protected area(s), including measures applied at import [ISPM No. 5,]





# Regulatory Status

- Official control should be:
  - Non-discriminatory, transparent and technically justified
  - Mandatory (all persons involved are legally bound to perform the actions required)
  - established or recognized by the NPPO under appropriate legislative authority
  - performed, managed, supervised or, at a minimum, audited or reviewed by the NPPO [ISPM No. 5, 2006]





Pests that are present in the PRA area, unless they are limited in distribution **and** under official control, do not meet the criteria for quarantine pests and need not be considered further.



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# Elements of Categorization

- Identity
- Presence/absence in PRA area
- Regulatory status
- **Potential for establishment and spread**
- Potential for economic consequences







# Potential for Establishment and Spread

- Quarantine pest: “A **pest of potential economic importance to the area endangered** thereby and not yet present there, or present but not widely distributed and being officially controlled” [ISPM No. 5,]





## Potential for Establishment and Spread

- Does the PRA area have ecological and/or climatic conditions suitable for the pest?
- Does the PRA area have host species (or near relatives), alternate hosts, and/or suitable habitats for the pest?
- Does the PRA area have vectors if vectors are required for spread of the pest?





# Elements of Categorization

- Identity
- Presence/absence in PRA area
- Regulatory status
- Potential for establishment and spread
- **Potential for economic consequences**





## Potential for Economic Consequences

- Quarantine pest: “A **pest of potential economic importance to the area endangered** thereby and not yet present there, or present but not widely distributed and being officially controlled” [ISPM No. 5, 2006]



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# Potential for Economic Consequences

- Are there clear indications that the pest is likely to have an unacceptable economic or environmental impact in the PRA area?
  - Is it a known pest in its current area of distribution?
  - Does it have characteristics that suggest it could be harmful to plants?
  - Are susceptible hosts present in the PRA area and likely to suffer damage?





Pests that have no potential impacts in the PRA area do not meet the criteria for quarantine pests and need not be considered further.



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# Conclusion

**If the pest meets the definition of a quarantine pest**



**PRA process should continue**

**If the pest does not meet the definition of a quarantine pest**



**PRA process may stop**

**If there is insufficient information**



**Uncertainties should be identified and PRA process should continue**





# Organizing pest categorization data

Pest identity	Geographic distribution	Plant part affected	Follows the pathway (YES/NO)	Regulatory Status	References
<p>Scientific name</p> <p>Taxonomic position</p>	<p>Presence / absence and distribution in the exporting and importing countries</p>	<p>Leaves, stems, shoots, fruits, roots, etc.</p>	<p>Probability of the pest being associated with the pathway under assessment</p>	<p>Note any existing regulations in the exporting and importing countries</p>	<p>Record all references</p>





# Organizing pest categorization data

Pest Identity	Present in Pathway (Yes/No)	Present in PRA area (Yes/No)	Regulated in PRA area (Yes/No)	Potential for establishment and spread (Yes/No)	Potential for consequences (Yes/No)	Quarantine Pest (Yes/No)
<i>Erwinia herbicola</i> (Löhnis) Dye Black rot of grain	Yes	Yes	No	N/A	N/A	No
<i>Pseudomonas syringae</i> pv. <i>panici</i> (Elliot) Young <i>et al.</i> Bacterial brown stripe	Yes	No	No	Yes	Possible	Yes

