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Selecting Risk Management Measures in a Systems Approach

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Objectives – By the end of this presentation, you will:

1. Learn how analysts select risk management measures.
2. Understand the importance of identifying dependent and independent measures.
3. Review a real-life example.



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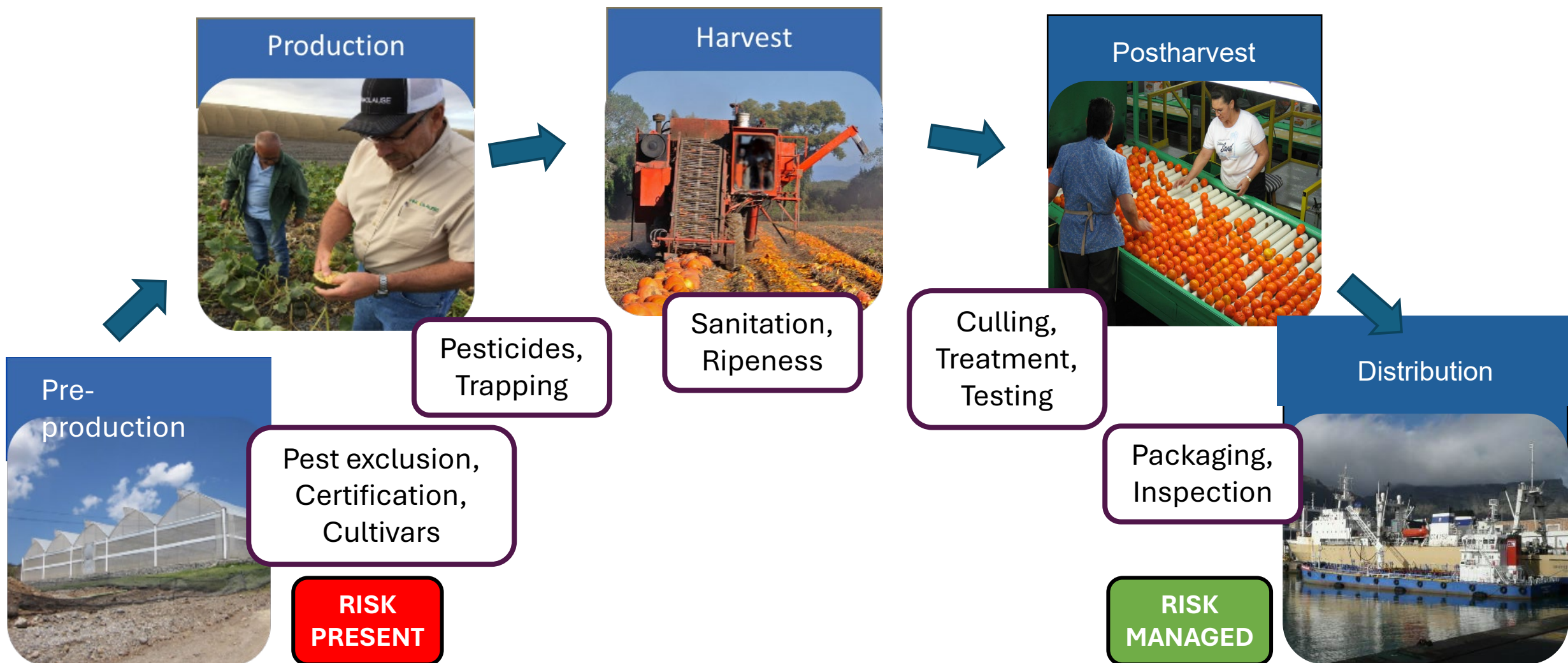
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How do we begin to determine risk management measures?

We need to understand the pest risk & production practices

- A pest risk assessment (ISPM 11)
 - ☐ What are the pests of concern?
 - ☐ How likely are they to follow the commodity pathway?

- Production practices
 - ☐ Does the risk management measure match the production practices?
 - ☐ Does the commodity tolerate the risk management measure?



EXAMPLE

Risk management measure: Washing Fruit

1. Does the risk management measure match the production practices?

Is washing the fruit a common practice in the exporting country?

Yes. Go to next question.

No. What equivalent measure could be substituted for washing?

2. Does the commodity tolerate the risk management measure?

Does the fruit or vegetable tolerate moisture?

Yes. Require the risk management measure.

No. Identify an alternative measure and start again at Question 1.





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Are there mitigating factors?

Is the pest somehow prevented from accessing the commodity?

- E.g., Geographic features, greenhouse production, etc.

Are there factors that prevent the pest from thriving on the commodity?

- E.g., resistant cultivars, ripeness at stage of harvest, etc.





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What is a Systems Approach?

A pest risk management option that integrates different measures, at least two of which act independently, with cumulative effect (ISPM 5).

Why do we need to identify which measures are independent?

- To ensure at least two measures are independent
- To appropriately identify additional measures to incorporate into the system



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EXAMPLE

Sharwil avocado

Movement of fruit from Hawaii to the U.S. mainland was approved in 1990 based on poor host quality

Pests: *Ceratitis capitata* and *Bactrocera dorsalis* (Diptera: Tephritidae)

Two assumptions (Liquido et al. 1995):

- Fruit do not ripen on the tree before harvest time
- Unripe fruits are not attacked by fruit flies





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Sharwill avocado

By 1992, movement of Sharwil avocados from Hawaii to the U.S. Mainland was halted.

What happened?

- Fruits were found ripening on the trees, allowing fruits to be infested
- Some flies infested fruit that were not yet ripe
- Researchers thought tree stress may be partly responsible for these observations

What does it mean?

- A single measure (resistant variety) was insufficient to mitigate pest risk





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Sharwill avocado

Requirements: standalone measure -> systems approach

Old measure: Resistant variety (Sharwil)

Added measures:

- Fruit fly population suppression
 - Trapping and spraying
 - Grove sanitation
- Harvest date restriction
- Safeguarding harvested fruit





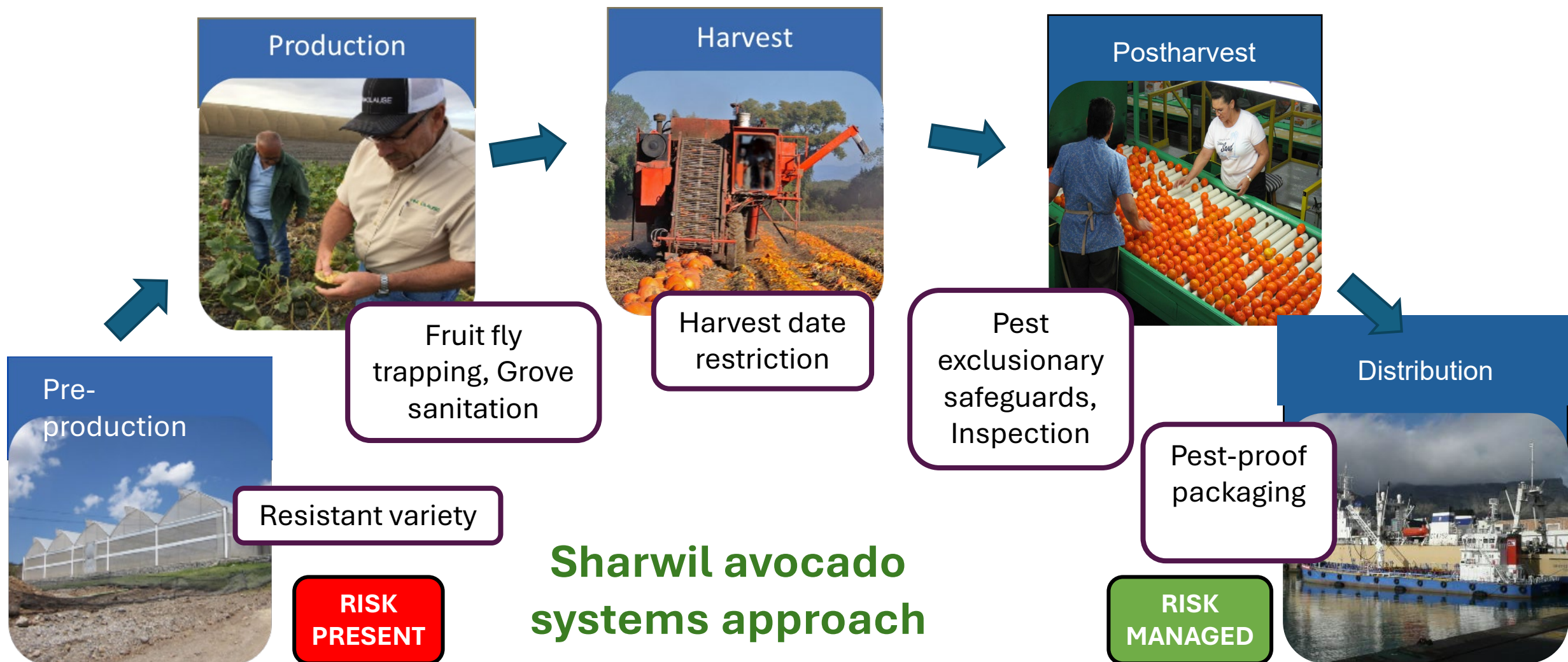
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Key Takeaways

1. Systems approaches are important frameworks for managing pest risk
2. We use production practices as the starting point for selecting risk management measures.
3. Understanding dependent and independent measures ensures that:
 - Risk is appropriately managed with overlapping measures, and
 - Successive measures are appropriately selected.

Thank You

References

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