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United States Department of Agriculture

Animal and Plant Health Inspection Service

Supporting organic trade by expanding the phytosanitary toolbox

Gabriel P. Hughes, Ph.D.

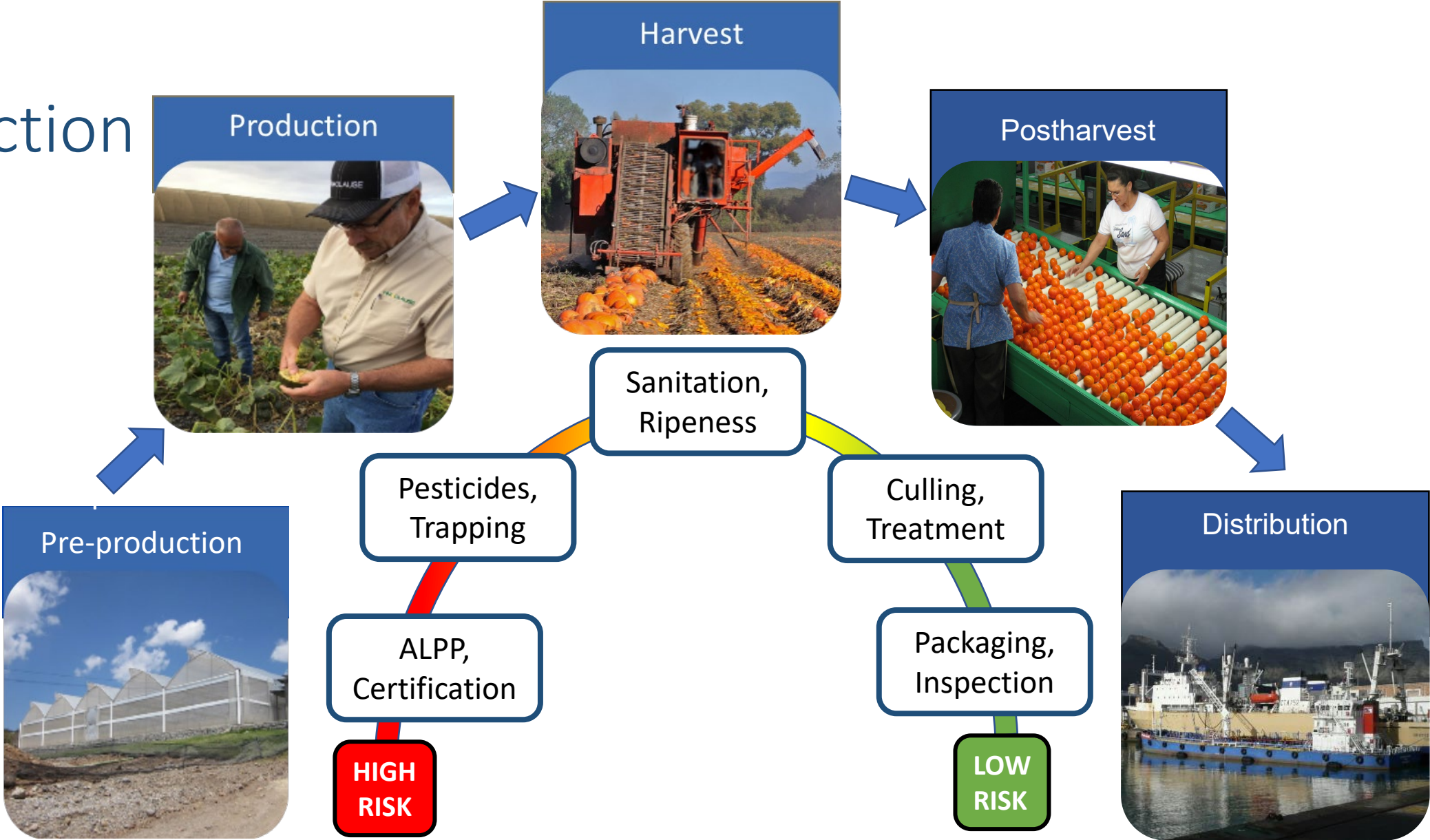
Risk Manager – Entomology

USDA-APHIS-PPQ

February 26, 2022



Cumulative Risk Reduction



Systems Approaches

Definition (ISPM 5)

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

Circumstances for use (ISPM 14)

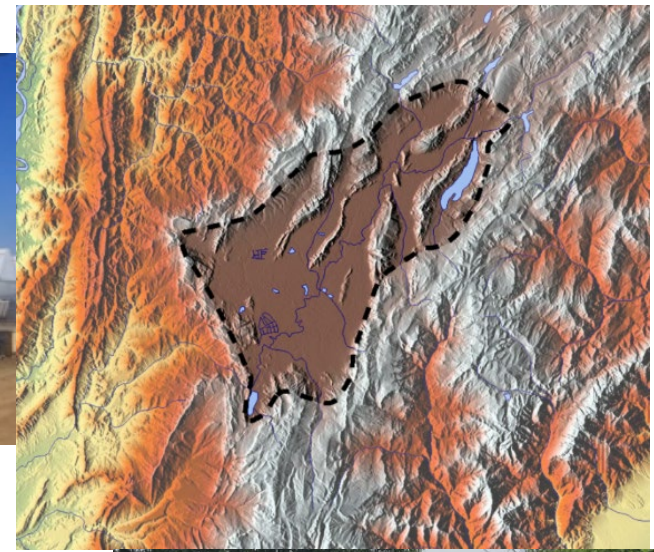
- Used when individual measures not available or restrictive
 - Measures can be monitored / corrected
 - Pest / pest-host relationship known
 - Prevalence of the pest(s) is known and can be monitored



Preharvest Measures

- No other hosts in buffer / production area
- Elimination of mature or over ripe host fruits from production area
- Removal of shade trees within buffer / production area
- Only specific cultivars allowed (resistant or less susceptible)
- No harvest after specific date or trapping triggers

Field Measures



- Pest free growing structure
- Limit altitude for growers and packing area to certain levels
- Quarantine road stations /signs
- Fruit bagging
- Registered or approved production sites





Example: Papaya
from Central America

Target Pest: Medfly
(Ceratitis capitata)

Major Mitigations:

- Poor host
- Low prevalence (trapping)
- Specific cultivars
- Specific maturity stage
- Hot water dip

Recent Examples of Systems Approaches used by APHIS

Chile blueberry (2020)

China citrus (2020)

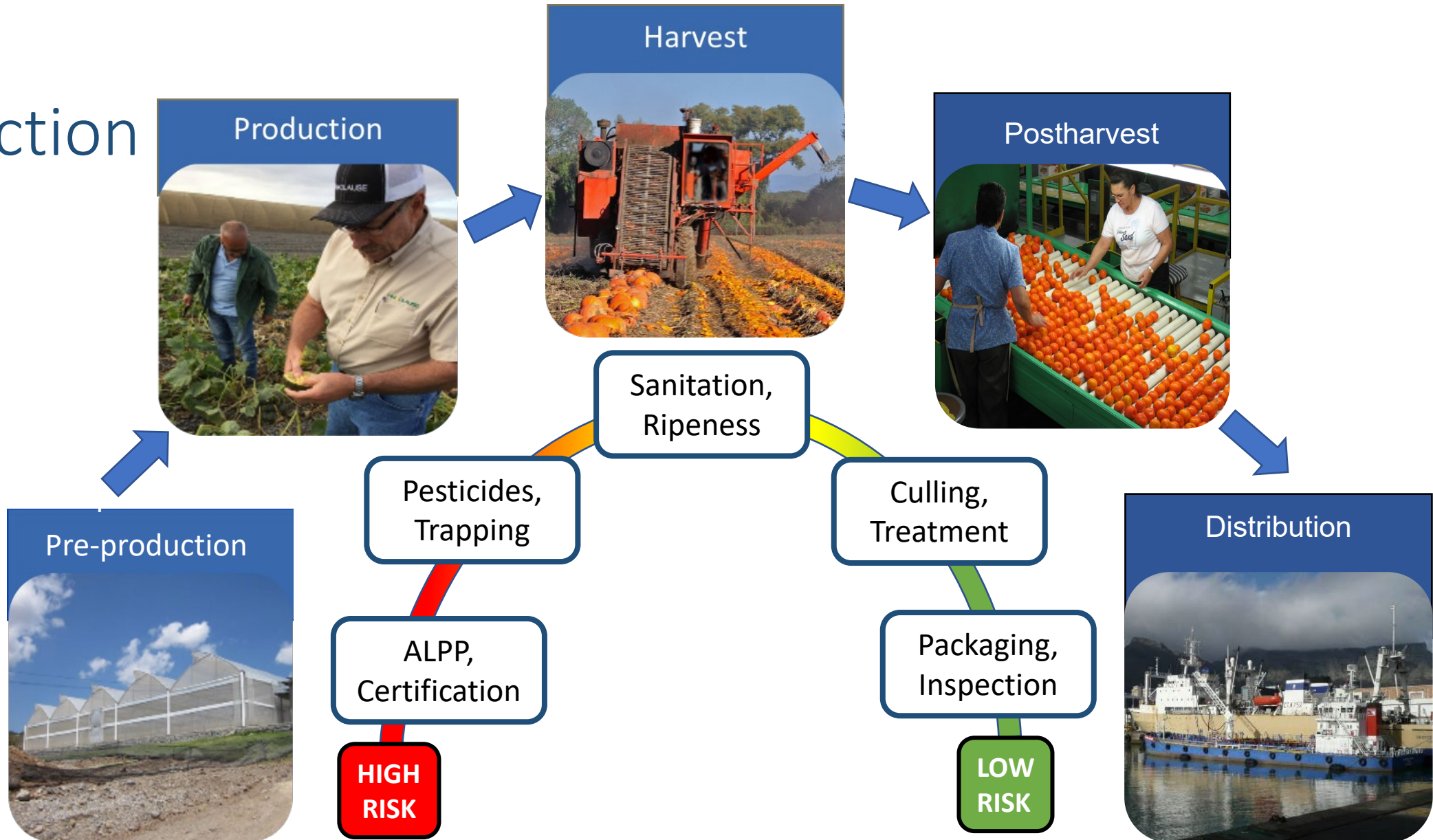
Colombia avocado (2017)

Colombia cape gooseberry (2014)

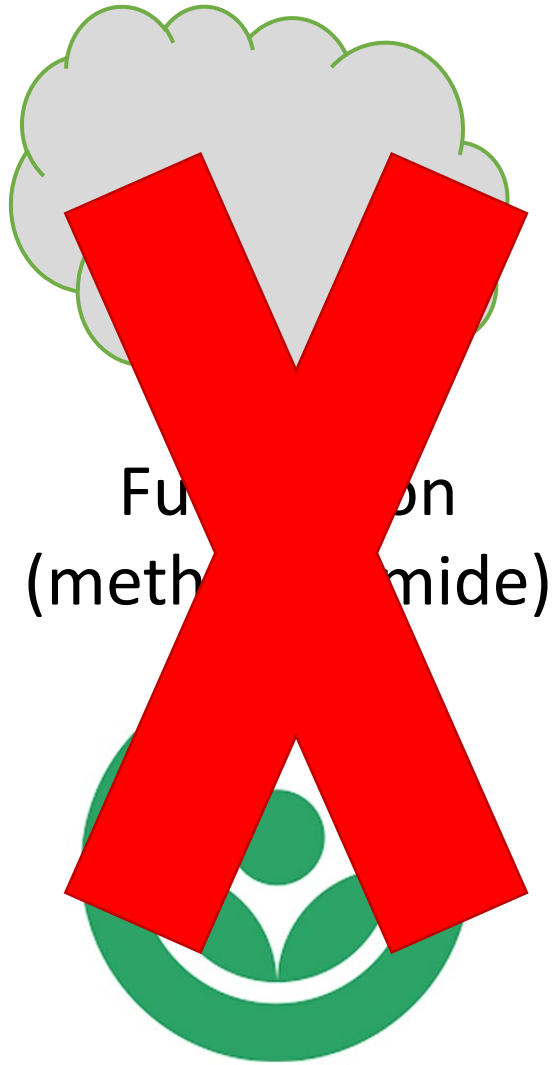
Peru avocado (2010)

Nicaragua pitahaya (2011)

Cumulative Risk Reduction



Treatments

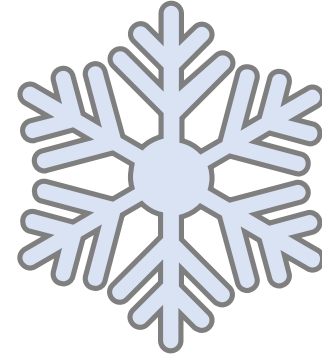


Fumigation
(methyl bromide)

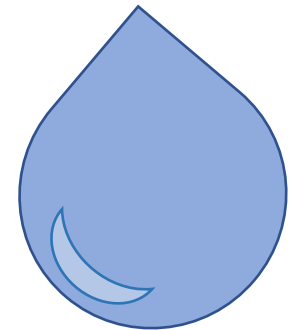
Irradiation

← Cannot be certified organic

Can be certified organic →



Cold



Heat, steam, and immersion



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Thank you!