

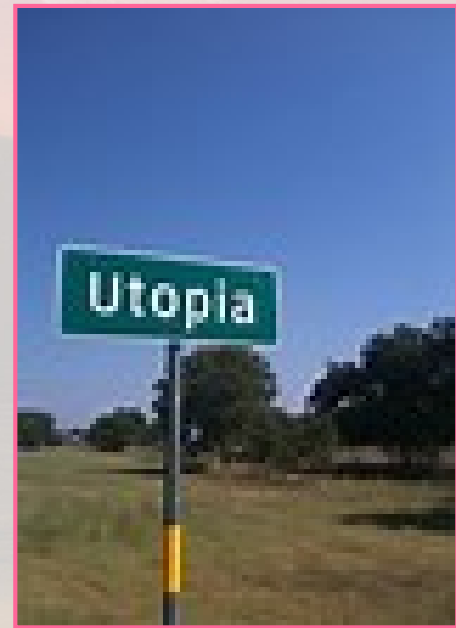
A surreal landscape featuring a large, glowing Earth in the upper right sky, a bright sun in the upper left, and a bird flying over a body of water in the foreground. The scene is bathed in a soft, golden light, suggesting a sunrise or sunset. The text is overlaid in the center of the image.

Phytosanitary Irradiation Tomorrow

Can we reach utopia?

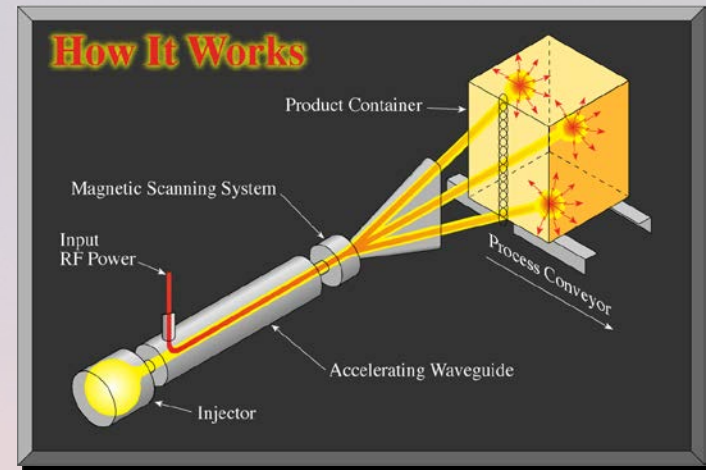
In a regulatory world...

- 1 kGy limit
- Labeling
- International approvals
- MAP packaging
- Generic doses
- Fruit quality
- Other pests



Regulatory issues

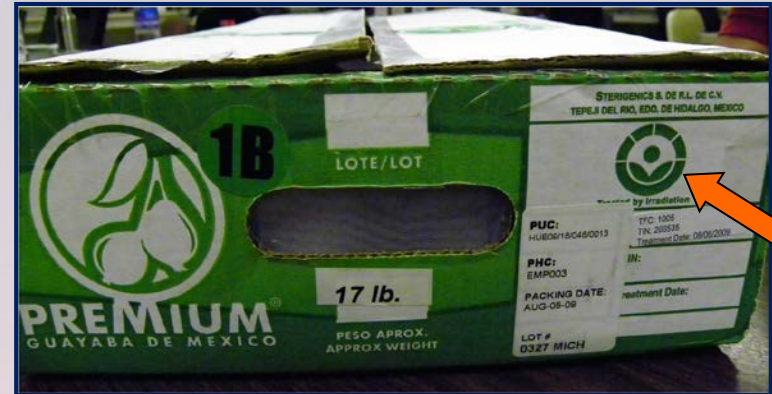
1 kGy limit



- Throwback to concerns 50 years ago
- Food irradiation classified as an additive rather than a process
- Immediately → should raise to 1.5 kGy
- Ultimately, raise to 10 kGy
- Fruit quality should dictate upper limits

Regulatory issues

Labeling



- Irradiation not an additive
- To start, be more flexible and descriptive
 - “Treated with x-rays to protect agriculture”
- No labeling requirement – consumer should decide



Regulatory issues

International approvals



- Biggest impediment to future expansion
- Phytosanitary irradiation not approved in many countries
- EU, Japan, Taiwan, Korea, Canada
- “Imagine there’s no countries, it’s easy if you try...” (John Lennon)

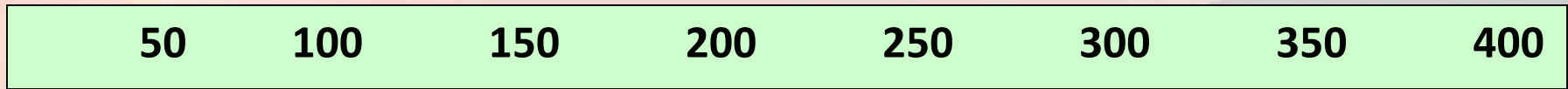
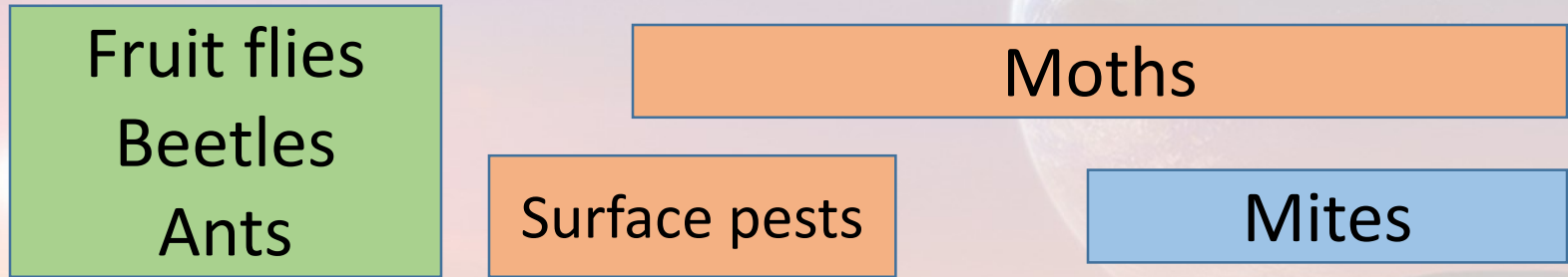
Regulatory issues

MAP restrictions

- USA - <18% O₂ prohibited, IPPC no MAP
- USDA 18% down to 10%
- Studies do not support restrictions
- MAP restriction <1%
- No MAP restriction



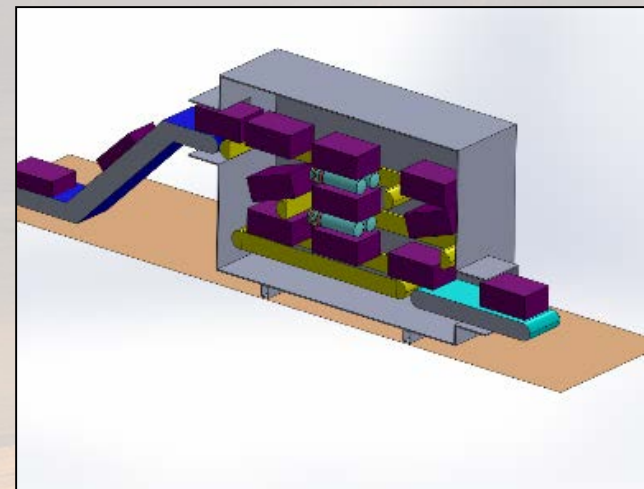
Comprehensive Generic Doses (proposed)



150	250	400
Fruit flies Weevils Ants Snails	Mealybugs Scales Psyllids Thrips Spiders	Moths Mites

Technical challenges

- Fruit quality
 - Pre- and post harvest factors
 - Mitigation measures
 - Molecular basis
- New equipment
 - X-ray and e-beam technology
 - In-line equipment



MAHALO

