Precision Safeguarding
Lessons learned from Precision Agriculture

Robert Griffin
Agriculture Quarantine Inspection Coordinator
USDA, APHIS, PPQ

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Precision Agriculture

Precision agriculture is a farm management system that leverages technology and information for just the right amount of input at the right time and place.
Precision Agriculture includes...

- Prescriptive planting
- In-field sampling
- Remote sensing
- Geo-spatial analysis
- Big data
- Response to variability
- Risk-based decision making
Key points

• Precision agriculture does not replace a farmer’s experience and insight but rather enhances it.
• Productivity is not necessarily increased but profit increases may be up to 20% from reduced input costs.
• Additional advantages in reduced impacts to the environment.
Concepts for Safeguarding

• Right place, right time, right amount
• Leverage technology
• Collect data, analyze
• Risk-based decisions
• Focus on priorities
Safeguarding Continuum

- Prevent Pest Introduction and Spread
- Offshore pest monitoring and mitigation
- Port of entry regulation, inspection and mitigation
- Market and internet monitoring and mitigation
- Pest detection
- Emergency response
- Pest management
- Export certification
- Trade negotiation
Operational Example

2% inspection versus risk-based sampling

- Under-inspect small consignments and over-inspect large consignments
- High variability around action rates
- Poor data for pathway ranking and trend analysis
- Consistent level of detection
- More efficient use of inspection resources
- Greatly reduces variability
- Multiple analytical advantages
Regulatory Policy Example

Pest-based versus pathway-based regulations

- Does not distinguish risks by pathway
- Pest specific
- Limited operational information
- Limited stakeholder value

- Pathway specific risks
- Can account for multiple pests/risks
- Operationally relevant
- Informative for stakeholders
Science and Technology Example

Probit 9 versus infestation-linked efficacy

• Independent of infestation level
• Usually overkill
• Inconsistent level of protection
• Limited research and implementation potential

• Depends on infestation level
• Linked to target prevalence of survivors
• Consistent level of protection
Precision Safeguarding

A guiding principle or “mindset” for maximizing the effect of limited resources to minimize the potential for establishment and spread of highest risk pests.

Leveraging technology and analysis to focus the right kind and amount of resources at the right place and time in the safeguarding continuum to achieve greatest effect.

Working deliberately and thoughtfully to collect and analyze information needed to improve decision making and implement best practices.
Thank You