

Precision Safeguarding

Lessons learned from Precision Agriculture

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NAPPO

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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



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

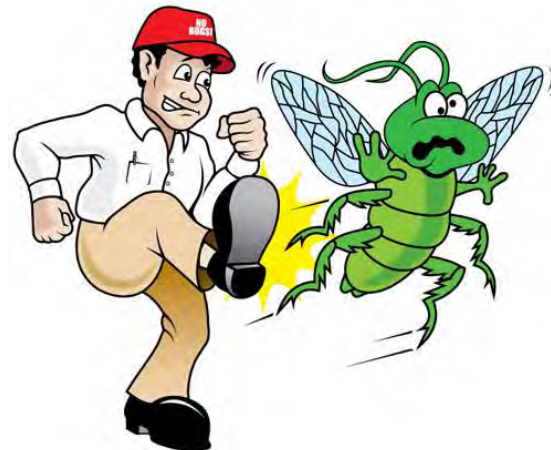
- Does not distinguish risks by pathway
- Pest specific
- Limited operational information
- Limited stakeholder value
- Pathway specific risks
- Can account for multiple pests/risks
- Operationally relevant
- Informative for stakeholders



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