USDA

United States Department of Agriculture

2015 NAPPO Workshop on Needs Assessment for regulatory support of the North American seed industry

Retrospective case – what can we learn from the past that we can apply in the future?

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Plants for Planting Policy

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Seed borne versus seed-transmitted pathogens
Pests, pathogens, weeds, soil, debris

Seed borne: usually removed by treatments, rarely cause disease

Seed transmitted: generally survive treatments, establishes on emergent seedlings.

Besides CGMMV, there are several other seed transmitted pathogens of potential concern. These include viruses, viroids, bacteria, phytoplasmas, fungi

Current APHIS import regulations for seed

- Prohibit certain seed species or allow seed in with proper documentation and a visual inspection at the port of entry.
- Proper documentation includes Phytosanitary Certification
- Shipments of imported seed from all countries other than Canada require a phytosanitary certificate from the country of origin
- Exception: small lots of seed which only require a permit.
- Canadian seed: seed analysis certificate (PPQ form 925 or CFIA form 5289) may be used in lieu of a phytosanitary certificate
- FSA labeling requirements

Detection of Cucumber Green Mottle Mosaic virus (CGMMV) in 2013 cucurbit seeds in California: need for increased surveillance against seed transmitted pathogens particularly in herbaceous seeds.

Seed summit in 2014 to discuss issues surrounding seed health

Some concerns/issues related to seed transmitted pathogens

Seed quality: consistency, pure, and free of pests, pathogens, weed seeds, debris, soil

1. Seed transmitted pathogen not easily detected by visual inspection
2. General phytosanitary certificate requirement does not provide sufficient safeguard
3. Routine seed health testing is not conducted
4. Limited availability of standardized seed testing methods
5. Limited availability of standardized sampling protocols for various types of seeds
6. Treatments are generally not effective

2014 Seed Summit outcome

Commodity groups set up to discuss specific issues

Wheat
Rice
Corn
CGMMV/cucurbits
Tomato/solanaceous crops/viroids

Let’s look at an example

Viroids : Genus Pospiviroids (ten viroid species)

- Detected in several countries
- Hosts
- Limited current regulations

What would exclusion strategies for viroids involve/require?

- Use of viroid-free planting material (tubers, seeds, cuttings, plants, etc.)
- Regulatory measures: quarantines, import restrictions
- Certification schemes guaranteeing freedom from viroids
- Detection: Standard protocols for seed sampling and testing for pospiviroids are not yet available

Typically, APHIS will require compliance with requirements for individual seed pathogens.

Result: expenses, delays, and other issues both for the industry and APHIS

Need: Develop a system that will address all possible threats caused by seed transmitted pathogens

Administrator's initiative for Alternatives to Rulemaking and Regulatory Flexibility

What do we need to do to ensure safe movement of seeds?

A practical, flexible policy framework

- Pathogen/pest list for seed transmitted pathogens
- Pest/pathogen prevalence in various countries
- Standardized testing and sampling protocols for different seeds
- Economic Impacts of pests of concern
- Systems approach: Selection of sites for seed production, testing, greenhouse operations, field release
- Quality Management system to ensure seed quality: accreditation, seed tracking, inspections, treatments, sanitation
- Consider new approaches to risk management and detection
- APHIS and industry working together to determine best approaches to prevent entry of infected seed: pilot program NSHAPP

Some current attempts to harmonize testing protocols

In 2014, Naktuinbouw (Netherlands) announced that it had developed two new pospiviroids tests for tomato and pepper seeds.

- Four PCR reactions to detect CEVd, CLVd, MPVd, PCFVd, PSTVd, TASVd, TCDVd and TPMVd.
- Test can detect one infected seed in 1,000 seeds.
- U.S., Netherlands, England and Australia are collaborating to conduct proficiency tests to compare the protocols used by each lab.

Several initiatives ongoing:

International Seed Federation ISF: ISF regulated pest list initiative (seed as a pathway)

International Seed Health Initiative (ISHI): testing methods development

ISPM standards
NAPPO standards: RSPM 36

What do we need to do together?

Harmonize processes and procedures between countries, and increase and improve collaboration between regulators and industry to ensure safe movement of seed

Plenty of challenges and opportunities ahead!!

THANKS!

QUESTIONS?