

NPDRS - St. Louis
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Potato Wart Breakout Session

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Recovery plan for Potato Wart

- *Synchytrium endobioticum*
 - On the select agent list
- Potato
 - 4th on list of world food crops
 - \$2.9 billion in U.S. (2005)
- Fungus persists in latent form in soil for years. Spreads slowly naturally. Moved on seed potatoes and soil by machinery and man.

Is the recommendation in the executive summary focused enough?

- Need to be more clearly stated in main report so they can go into exec summary
- Need to state what the impact would be on international trade of US potatoes
 - What/where is the US export market? Is it a case like “karnal bunt” ?
- What is current distribution of pathogen worldwide? Helps to recognize pathways.

Are the subject categories in this plan adequate?

- More is needed on historical background.
 - What happened that eliminated potato wart in the US? Development?
- Gaps in knowledge: specify
- Europe manages by using resistant varieties
 - Is anyone doing breeding in U.S. or for U.S. cultivars? Is Frito lay/industry addressing this disease?

Are the research, extension, and education priorities on target?

- Three scenarios for research priorities – appropriate – include surveys, germplasm evaluation, resistance breeding, molecular detection in plants and soils
 - Not known to exist in U.S.
 - Discovered in U.S.
 - Established in U.S.
- Would detection in Canada near the border influence priorities?

Are the research, extension, and education priorities on target?

- More work is needed on phylogeny and taxonomy of *Synchytrium endobioticum* and its close relatives.
 - Molecular markers are only as good as the descriptive work behind them.
- 20 pathotypes are reported defined by host responses. Are any genetic markers useful for differentiation?

Are the research, extension, and education priorities on target?

- Chemical control - Modify: Under zero tolerance, chemical control cannot be effective.
- However, research needs to be done on management practices to utilize chemicals with other approaches - trap crops, biocontrol.
- No information on newer chemicals

Are the research, extension, and education priorities on target?

- Increased knowledge is needed of biology, survival mechanisms - i.e. response to desiccation, temperature extremes, pH levels, etc. Is it only a cool climate pathogen?
- Perhaps could then require a 10-yr quarantine, rather than 30-50 yr, before replanting potatoes

Are the research, extension, and education priorities on target?

- Breeding for resistance is high priority - collaborate with Canada and Europeans.
 - US germplasm either has no resistance or has not been tested
- Add: Screen US cultivars with genetic markers for resistance genes that have been identified in Germany

Are the extension and education priorities on target?

- Extension/Education: Good
- Education: Groups that should be targeted
 - Home Gardeners
 - Breeders
- Expertise
 - Could identify additional resource scientists in US

Define recovery for this plan

- At present, quarantine is the only approach – statutory control
 - Canada went to extreme with physical containment.
 - Past experience in parts of US may be helpful in defining what worked.
- Add: Certification of freedom from wart to preserve export market.
- Is “zero tolerance” reasonable to achieve?

Forensics

- **How can forensics play a role in this plan?**
 - Not likely unless more is know of diversity of the organism to track source
- **What is the role of forensic plant pathology in the recovery plan?**
 - First responders should be trained in treating any observation as an introduced event, and alert authorities.