PVY Management: Current Strategies

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70% research, 10% teaching

20% seed certification, seed farm
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- Madison
- Central Sands
- Antigo
- Rhinelander

Map showing locations of Madison, Central Sands, Antigo, and Rhinelander.
Potato virus Y still limits seed potato production

HOST
Potato

PATHOGEN
Virus

ENVIRONMENT
+ VECTOR
Potato virus Y causes yield and quality losses

Yield
• Severe = equivalent to removing plant
• Milder = 1 cwt/acre per 1% PVY

Quality
• Tuber necrosis
• Mishapen or cracked tubers
• Reduced storage quality
Certification data is a useful long-term data set

Inspection data maintained on seed potato health certificates
- disease incidence
- field location
- production history

Health certificates are a long term database of seed potato health
Certification data identifies major problems in seed potato production

What is the most significant disease in certified seed potatoes?
Health certificates: PVY is the major disease limitation in seed potato certification

In Wisconsin, PVY causes over 90% of seed potato rejections due to disease.
Certification data can be used to track long term changes in potato health

Has PVY historically been the most important disease for seed potato certification?
Seed potato health has improved over time
Seed potato certification has been very successful!

Seed potato certification has successfully controlled several diseases, such as bacterial ring rot, potato spindle tuber, and PVX.

These disease have not entirely disappeared, so seed certification is still needed.
PVY incidence increased in Wisconsin in 1999.
What could we do to reduce PVY in seed potatoes?

PVY-Resistant Potato?

Reduce aphid pressure?

Virus-free seed potatoes?
PVY management methods improved at UW seed farm

Reduced number of years that problem varieties are grown in the field.

Planted rye or winter wheat, so that there was no bare ground between potato plots.

Regular mineral oil sprays.
PVY incidence reduced after production changes