



PVY Management: Current Strategies



Amy Charkowski
Professor, Plant Pathology
Admin. Director, WI Seed Potato Certification
UW-Madison





UW-Madison Potato Research Group



70% research, 10% teaching

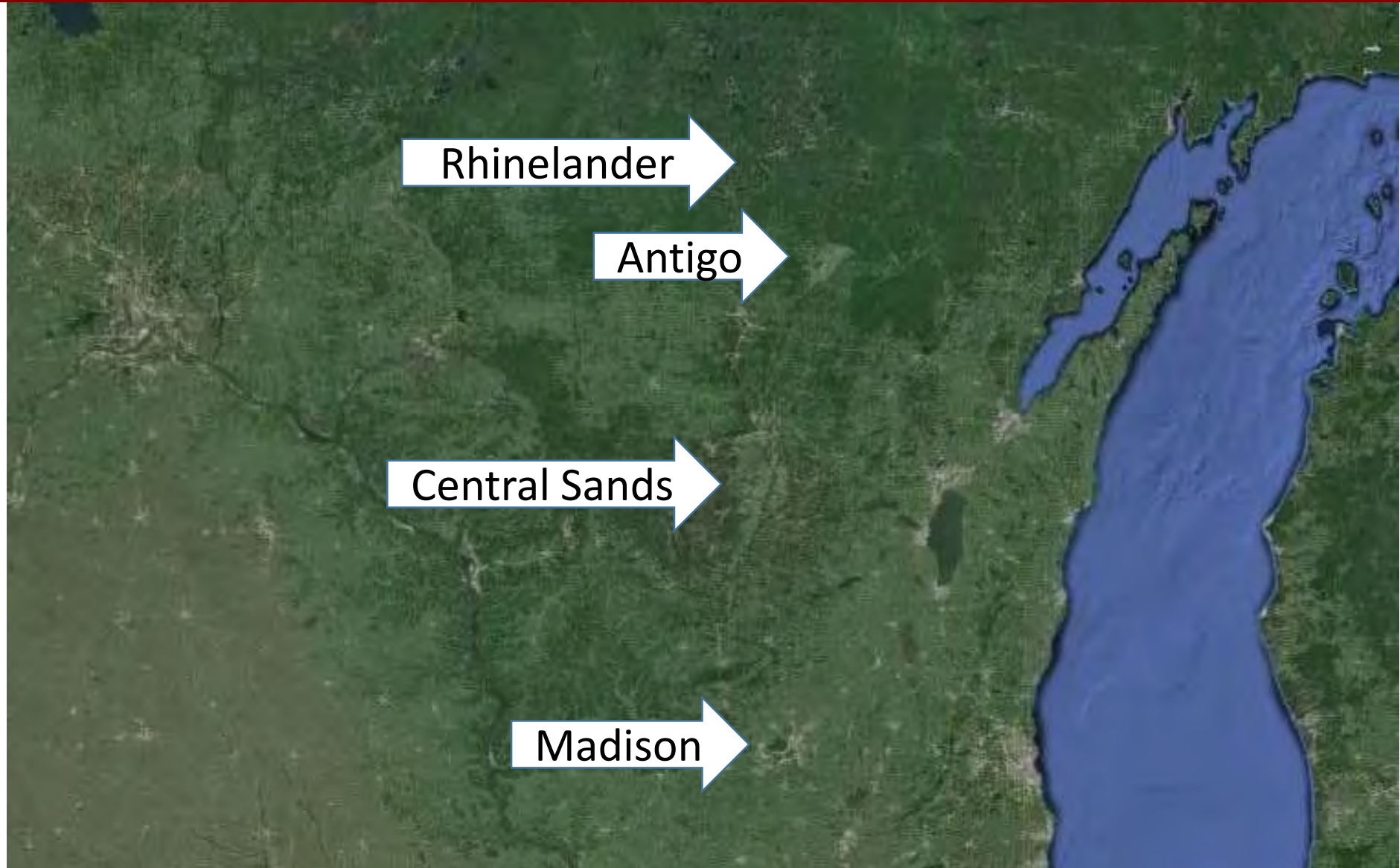


20% seed certification, seed farm



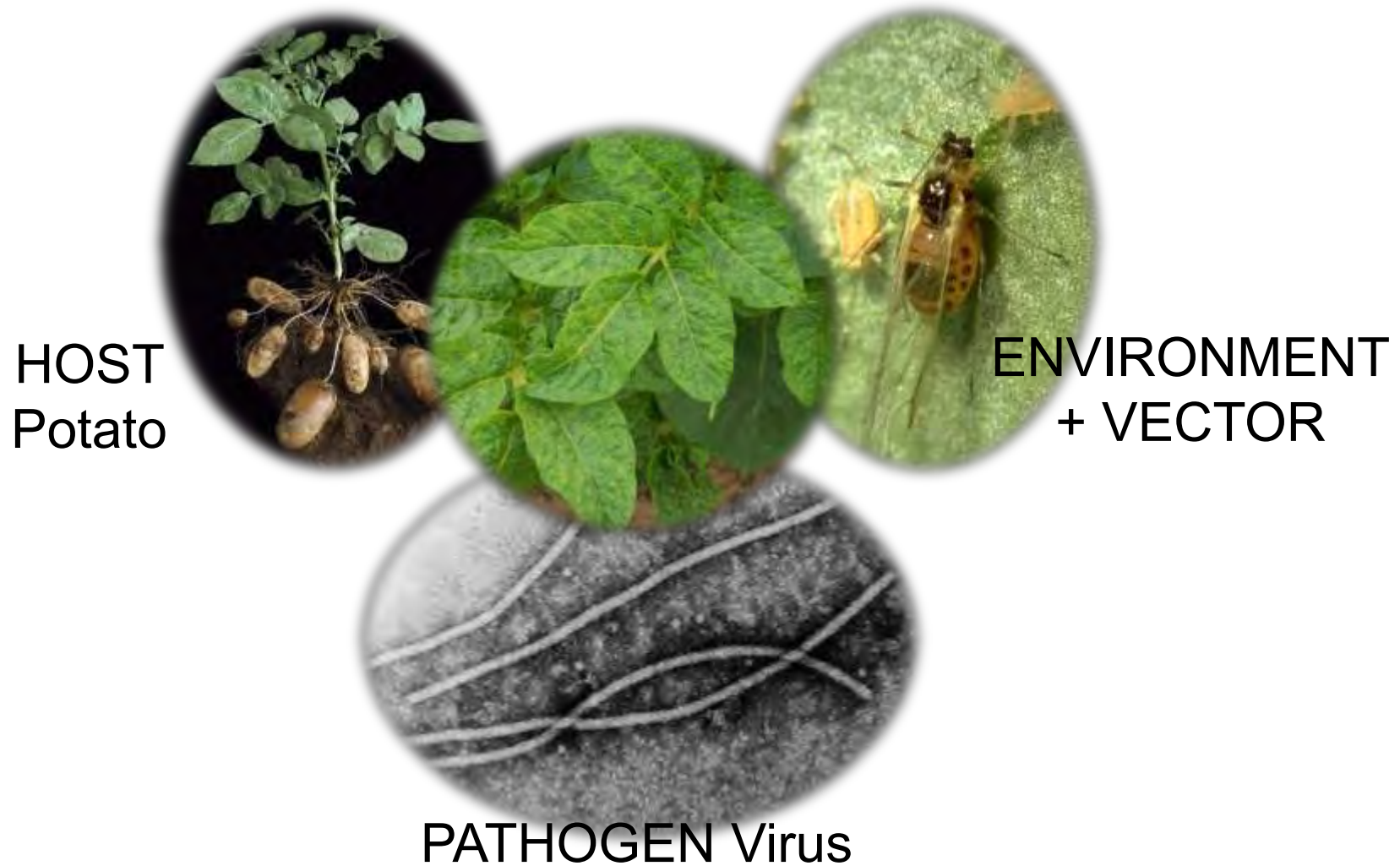


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Potato virus Y still limits seed potato production



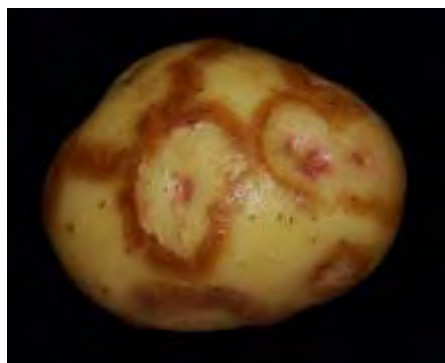


Potato virus Y causes yield and quality losses



Yield

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



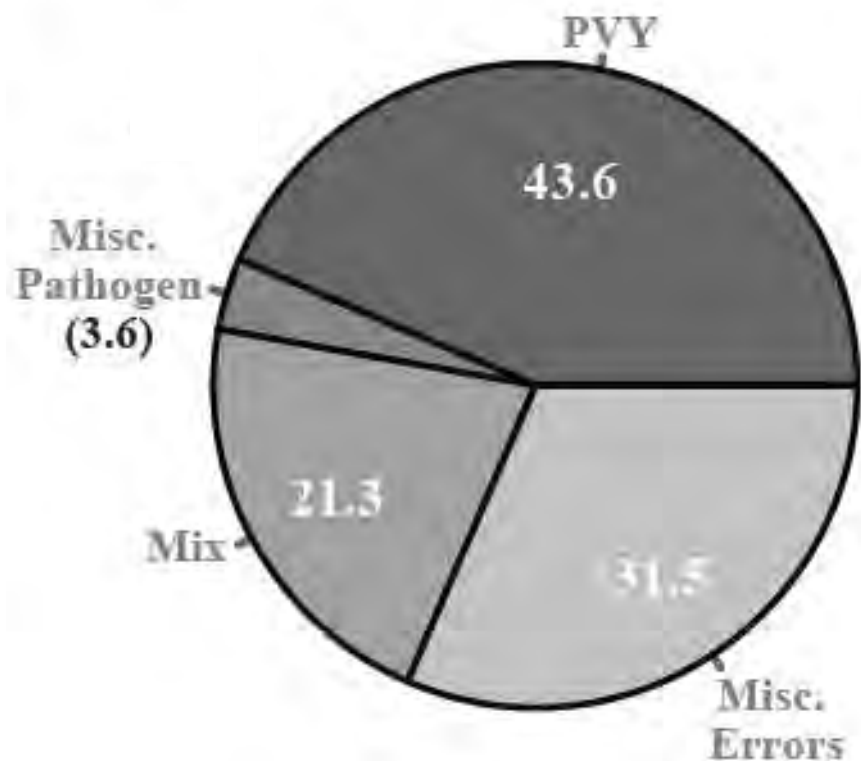
Quality

- Tuber necrosis
- Mishapen or cracked tubers
- Reduced storage quality





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?

NORTH AMERICAN CERTIFIED SEED POTATO HEALTH CERTIFICATE - CROP YEAR

Grower **Inspector**
Name
City, State/Prov.
Variety Acres Quantity Shipped
Size

Lot Certification Lot originated from tissue culture No Yes
Certification # Year micropropagated for planting
Seed Class/Gen.
Certifying State/Prov. by

Production environment pedigree: BE 1 column per production year, use different initials in Greenhouse and field zones for different zones
(e.g. ZIF for Idaho Health Farms) indicate a tuber raised lot with a "T" after three initials, describe other footnotes in notes below.

Year of Production					

Greenhouse (insert excluding) & acorns soil
Field (note special measures below)
Certification No. Number of years produced
Certifying State in field soil

Summer Field Readings **Post harvest readings**

Field inspections Location

1st	2nd	3rd	Final	FBAL	Sample No.

Low Dam High Dam **FBAL**
*LEAF ROLL
*SACBAC
*VARIETAL MIXTURE
*BLACKLEG
*NVERT = *SPUSARZEM =
*SHARLY BLIGHT

Lab test results for latent viruses
SPVY SPVX

Other Diseases No. of years since last found on this grower's farm, or NONE ON RECORD if less > 10 years Not found this year during normal certification field inspection

Bacterial Ring Rot
Late Blight

Eligibility for certification in the area of production Yes No

Note:

The above information is accurate to the best of our knowledge

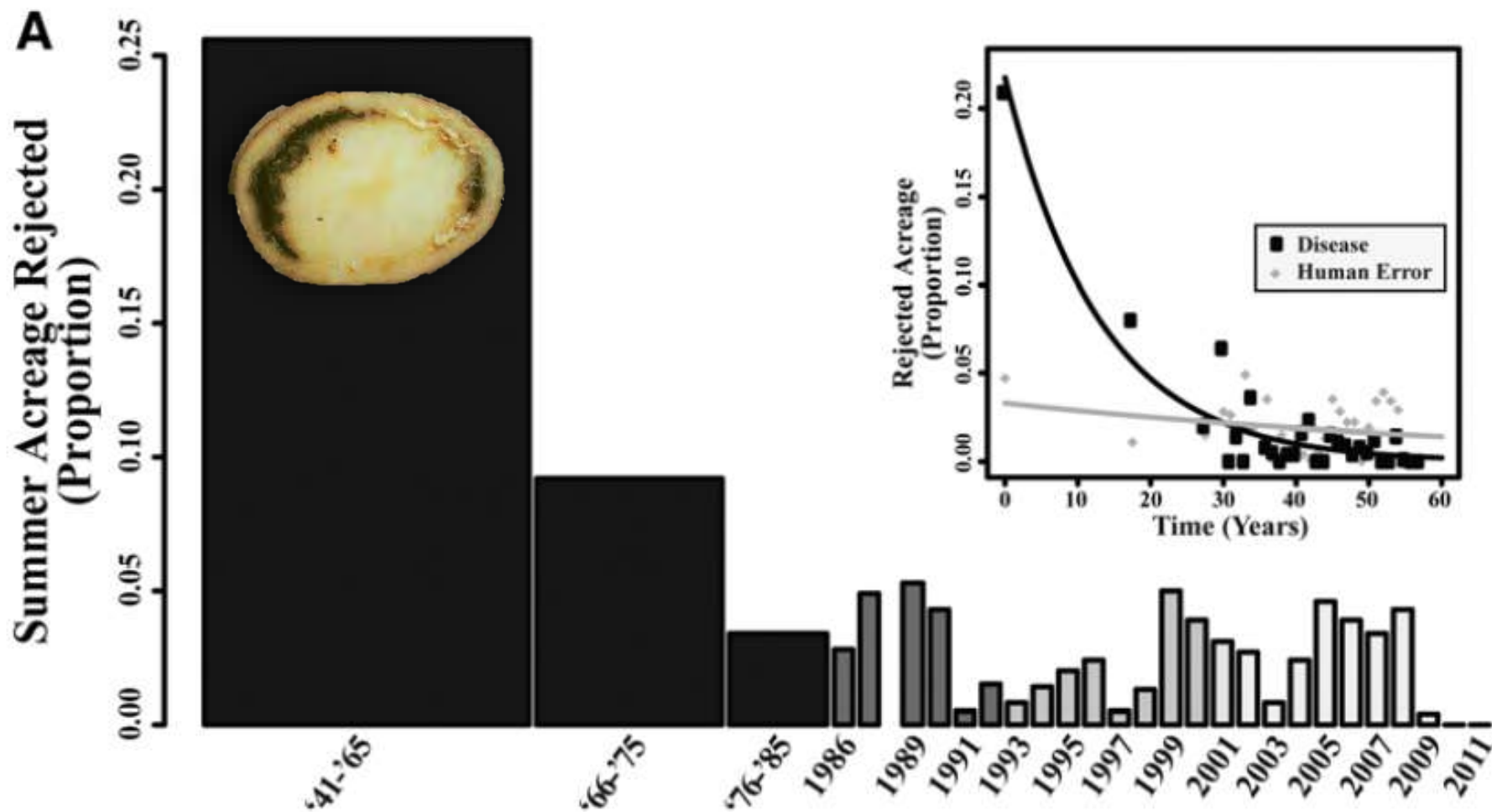
Program official / UGA Date
Agency Telephone
FAX

Approved for use by the Certification Section of the Potato Association of America



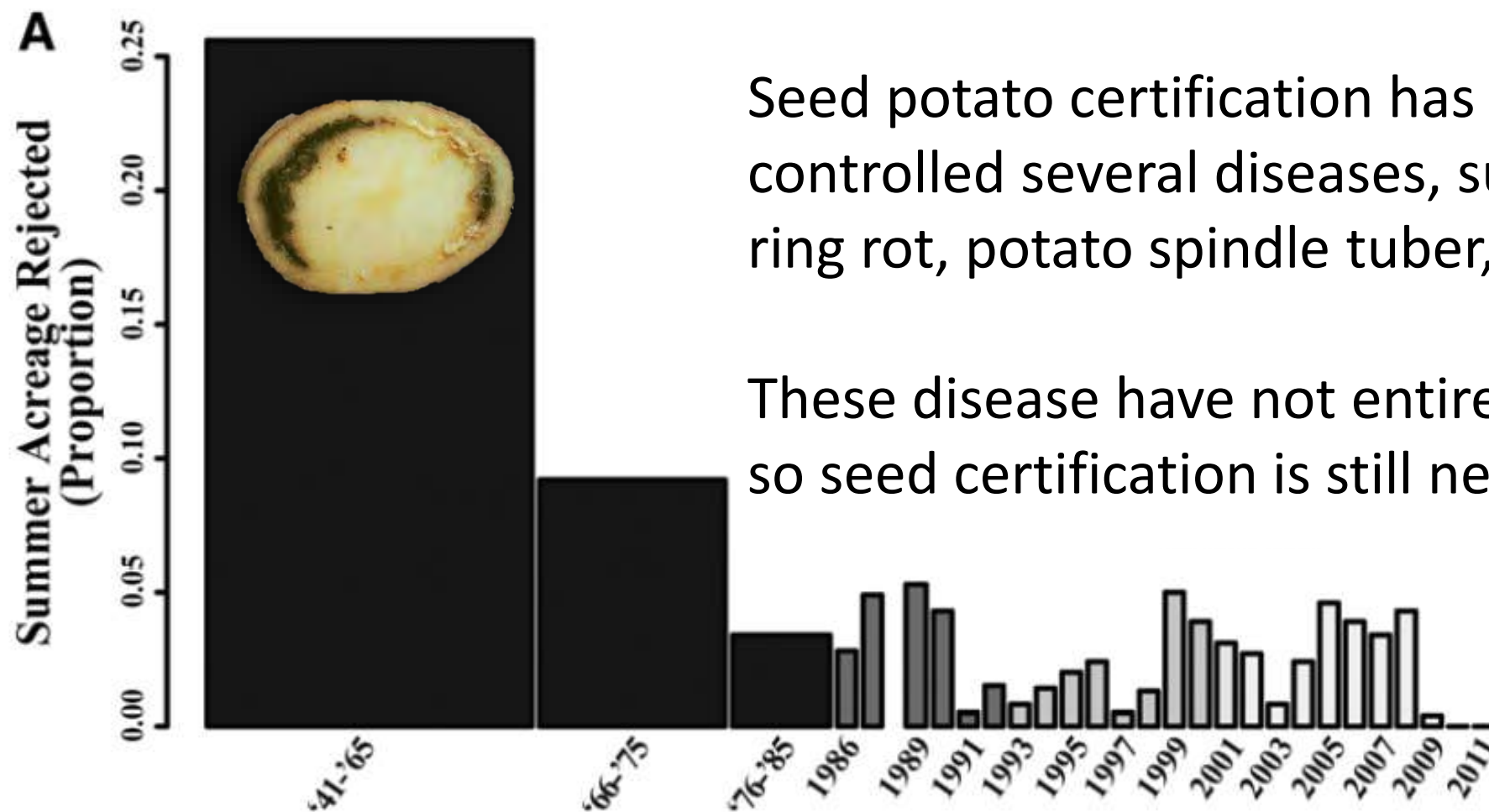


Seed potato health has improved over time





Seed potato certification has been very successful!



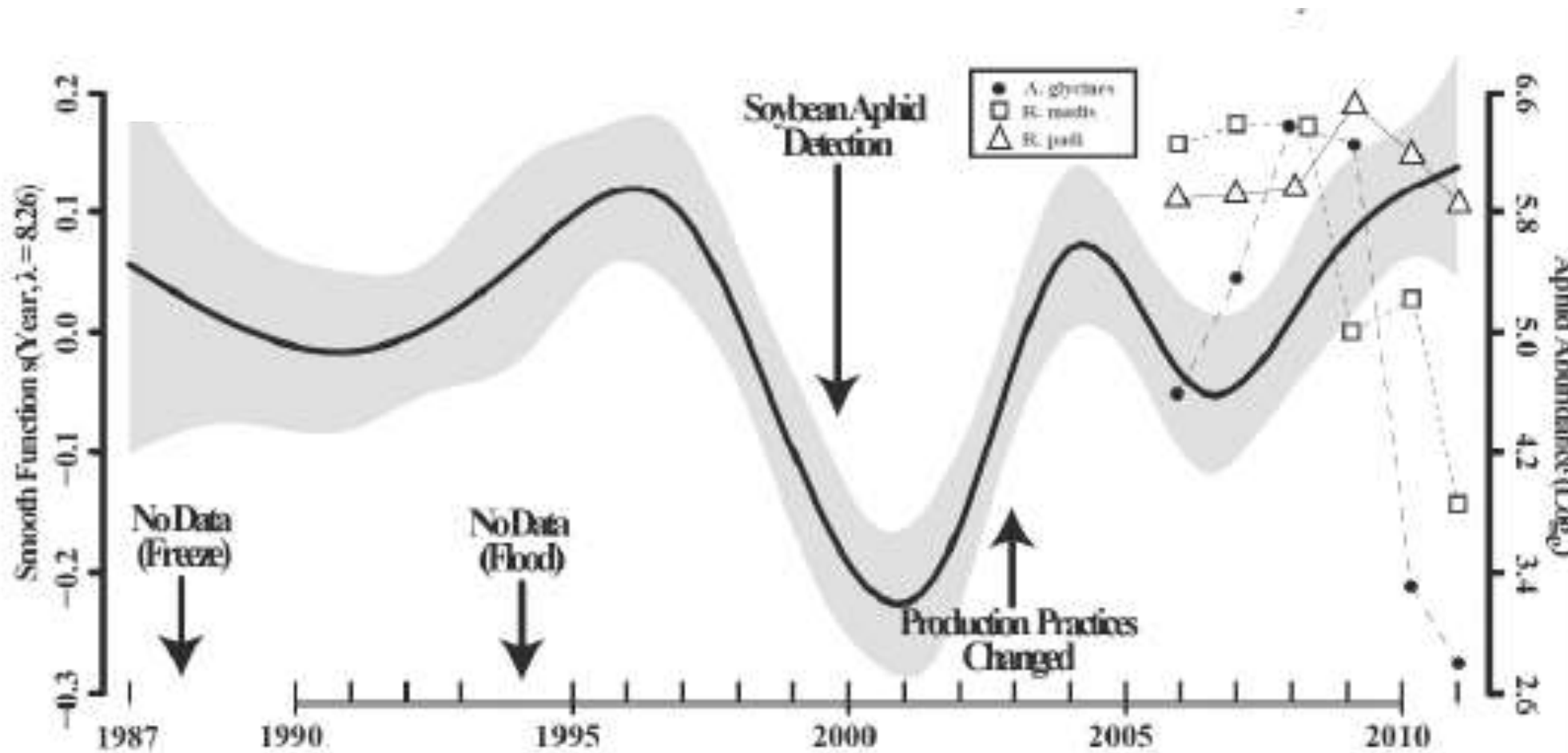
Seed potato certification has successfully controlled several diseases, such as bacterial ring rot, potato spindle tuber, and PVX.

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

