Agenda - WERA89/SCRI
March 11-12, 2025
Hyatt House Nashville Downtown, 535 Rep. John Lewis S
8:00 am to 5:00 pm Central Standard Time

Zoom Link:
https://uwmadison.zoom.us/j/96540871843?pwd=IFmUCT4GTNFkUrYaOPQUISOME2eCj0.1
Meeting ID: 965 4087 1843
Passcode: 987766

Chair: Brooke Babler, Wisconsin Seed Certification
Vice Chair: Chakradhar Mattupalli, Washington State University
Secretary: Jaime Willbur, Michigan State University

Registration Fees: In-person attendees invoiced upon meeting completion

Tuesday March 11, 2025

In-person Day 1:	
Name	**Affiliation**
Brooke Babler	Wisconsin Seed Potato Certification (WSPCP)
Chakradhar Mattupalli	Washington State University
Jaime Willbur	Michigan State University
Heidi Falzon	Agdia Inc.
Josie Spurgeon	WSPCP
Sarah deVeer	WSPCP
Cole Lubinski	WSPCP
Nina Zidack	Montana Seed Potato Certification
Andrew Houser	Colorado Potato Certification Service
Teresa Almeida	Colorado Potato Certification Service
Michelle Leckler	Colorado Potato Certification Service
Jack Meevwsen	Washington State University
Zach Holden	Washington State University
Alice Pilgeram	Montana State University
Walter DeJong	Cornell University
Pia Spychalla	Cornell University

Mark Pavek	WSU
Alan Westra	awestra@idahocrop.com, Idaho Crop Improvement Association
Adam Winchester	North Dakota State Seed Department
Damen Kurzer	Michigan Seed Potato Association
Aritra Roy Choudhury	Montana Seed Potato Certification
Julie Pasche	North Dakota State University
Rachel Johnston	Montana Seed Potato Certification
Rabecka Hendricks	University of Idaho
Nora Olsen	University of Idaho
Alex Karazev	University of Idaho
Erik Wenninger	University of Idaho
Chris McIntosh	University of Idaho
Tami Brown	Oregon Seed Certification Service
Mohamad Chikh-Ali	Colorado State University
New in-person Day 2:	
Pragati Dahal	University of Idaho

Zoom: Joseph Coombs MSU, Benita Matheson WSDA, Rachel Selstedt NDSU, Melanie Filiatrault, Lisa Piche, Robert Alvarez U of MN, Noelle Anglin USDA, Aymeric Goyer, Beth Niebaum, Caroline Gray, Carolyn Keller, Dallas Domingues, Dipinte Gupta, Jenn Dillinger PCAN, John Hammel, John Onditi, Jonathan Whitworth USDA ARS ID, Kylie Swisher Grimm, Max Feldman USDA ARS WA, Megan, Melindab, Melissa Bertram, Muhammad Azmat Ullah Khan, Noelle Anglin, Rachel Selstedt, Rhett Spear, Sagar, Stephanie, Carolyn Keller, Meret B, Amy Charkowski

Impact Statement

WERA89 is unique in that fosters a collaborative platform for both seed potato certification agencies and potato researchers to discuss topics related to seed potato certification challenges; pest and pathogen management strategies; potato breeding innovations and benefits; and education on current diagnostic capabilities and challenges. This platform is not only essential for sharing vital research and resources but also provides the opportunity for research collaborations across various organizations.

Accomplishments

The potato virus and virus-like research and extension community continued to make advancements towards the management of economically important diseases caused by these organisms.

- A Specialty Crop Research Initiative (SCRI) was awarded in 2021. The SCRI titled *Development of sustainable system-based management strategies for two vector-borne, tuber necrotic viruses in potato* is led by Alexander Karasev (U of ID). Many members of the WERA89 are involved in the four specific objectives outlined in the SCRI. Discussions continued on how to advance these areas of research along with outreach/extension efforts.
- Direct tuber testing validation research is expanding across certification agencies and includes Montana, Michigan, North Dakota, Colorado, Idaho, and Wisconsin. In addition, PVY immunocapture antibody optimization is being worked on by Agdia, Inc.
- Research confirmed that oil and insecticide together with seed lot placement are beneficial to PVY management.
- Discussed the need for a outreach/training events for certification agencies to train on diagnostics such as field inspections and molecular assays.
- Challenges exist in detecting PMTV and TRV in potato, environment, age, variety, etc. all play roles if the tier level.
- Research continues understanding the evolution of PVY strains across the US with PVY-N-wi and PVY-NTN becoming predominate strains and PVY-O detections being minimal to none.

Meeting Minutes

8:00 am Call to Order (start 8:02 am)

- Introduction
- 2024 Minutes approval (motion to approve Alex Karasev, seconded Nina Zidack)
- 2025 Agenda discussion/approval (motion to approve Julie Pasche, seconded Andrew Houser)
- Other announcements: Lunch location, SCRI meeting tomorrow in same room

8:15 am State Certification Reports

- **Tami Brown** - Oregon State Seed Potato Certification (8:11-8:23)

Certified 3,364 acres with 112 lots, some deferred for nematode concerns, commercial use, or size exemptions. The growing areas are located in four counties: Gilliam, Union, Jefferson, and Klamath. Certified production has been ongoing since 2017, with approximately 3,300 acres under certification. The primary varieties grown are Clearwater Russet and Lamoka, mostly FY2 and FY3, with one grower producing FY1. DTT was conducted on 14 lots, with 12 testing negative; the protocol included a two-week warm incubation (~85°F) followed by lab testing. Greenhouse growth post-coring was reportedly affected. Among 19 samples, PVY strains detected were predominantly NTN and N-Wi, with one N:O. Concerns were raised about the feasibility of on-farm coring in Oregon.

- **Alan Westra** - Idaho Crop Improvement Association (8:25-8:39)

Between 2008 and 2024, approximately 32,000 acres of potatoes were planted, exceeding current needs, prompting some dumping this year, with an ideal target closer to 30,000 acres. Rejection rates were low at 0.10%, mostly due to paperwork issues rather than virus presence. In 2024, monitoring for leaf roll and mosaic showed 7.9% of seed lots testing positive – slightly higher than

the 7.6% in 2008 – with 59 positive and 750 negative samples. Blackleg incidence was low at 0.89%, increasing to 2.58% on second inspection, with rates ranging from 0.01% to 0.03%. Since 2014, over 4.5 million cores have been tested for bacterial ring rot (BRR) using the core and soak method. However, growers have shown little interest in on-farm tuber coring due to testing fatigue with FTA cards. Winter growouts have been poor, with slow and uneven emergence – only 7% of potatoes picked and tested by January 1 compared to the usual 30% – and overall stands averaging 79% with a 10-year average of 78%. Post-harvest test (PHT) PVY results in 2024 showed about 50% certification eligibility, with 30% of samples at 0% PVY, another 30% under 1%, and an overall PVY mean of 3%. Discrepancies between leaf and retests pointed to possible late-season PVY infections.

- **Nina Zidack** - Montana Potato Seed Certification Program (9:26-9:45)

Poor emergence in Hawaii due to dry soil conditions, despite irrigation being used. Shared the optimal sampling height (10-12 inches) for testing and explained the mandatory summer testing process, which includes selecting 10 leaves per family from the first generation (G1) planted in families. She mentioned that some varieties, like Umatilla and Clearwater Russet, showed slow emergence. Physiological age and immature seed played a role in emergence, and the PVY rate was 0.78% in 2024, with a target of 0.5% for re-certification. PVY increased as the generation number grew, with Norkotah showing particularly high levels in G2 and G3. Testing and roguing strategies were described, as well as the importance of inoculum levels, field placement, and isolation. Several questions were asked regarding the integration of DTT in certification and advice to growers, with an emphasis on staying responsive and maintaining communication with them.

- Technical issue with computers

- **Brooke Babler** - Wisconsin Seed Potato Certification Program (9:02-9:25)

Shared that 29 lots were downclassed in 2024, with 16 downclassed to certified and 2 rejected. Rejections higher since 2020, with 6% of lots rejected and 20% downclassed to certified in 2024 due to virus levels. Provided insights into the testing process, including ELISA, visual inspections, and lab testing. Visual and lab testing completed by January 27. The testing also included comparing IC-PCR and ELISA on same tubers following three-week warm period, gassed, and grown out in greenhouse for 119 samples as part of a DTT survey. In 2024, a slight decrease in PVY was observed, although discrepancies in classifications were noted between testing methods. Discussed the efforts to identify PVY strains (O, N:O, NTN, and N-Wi with Chikh-Ali primers) and ongoing work in gel optimization and RNA extraction.

- **Eric Byre**-Minnesota Potato Seed Certification

Shared that Minnesota growers applied to certify 7,061.15 acres for the 2024 crop year, which was a increase from the 6,826.91 entered in 2023. In total 5,253.11 acres were certified-326 withdrawn due to flooding, 8.04 experimental, and 1,474 acres rejected due to severe mosaic and various other issues. Russet Burbank acres were the largest of any variety. Growers saw a delay in planting, then record rainfalls and flooding, and then the growing season turning hot leading to harvest delays. There was 308 samples submitted for the PHT in Hawaii, with 6 grown in the office due to missing the deadline. PHT inspections started Jan 6th and excellent growing conditions observed in Hawaii this season. Plants expressing visual mosaic symptoms were picked along with negative controls. Latent varieties were screened for PVY. Overall, a increase in PVY this year compared to prior years.

- **Andrew Houser** - Colorado Potato Certification Service (9:49~10:20)

Colorado is currently looking to fill a position in their lab. Provided data on PVY prevalence, noting that 2024 had significantly lower PVY levels compared to recent years, with 1.9% of lots testing positive. Highlighted that extra gassing and variety-specific treatments, like double gassing, can help with dormant varieties (e.g., Waneta and Sangre). Also discussed the Colorado seed law and requirements for plantback testing, as well as the importance of aphid monitoring. He also addressed the use of DTT in testing and survey of growers' confidence in its accuracy and value of earlier results in combination with current growout. A major change for 2025 was also noted, with a requirement for all seed intended for plantback to be tested for PVY.

---30 min Break---

- **Adam Winchester** - North Dakota Seed Potato Certification (10:55-11:15)

Provided an overview of North Dakota's seed potato regions, with most seed staying within the state. 330 lots were entered and PHT conducted at Pioneer in Waialua, HI. Described field conditions for the 2024 season, noting excellent emergence and vigor despite high virus levels. Latent varieties Silverton, Shepody, Norkotah, and Prospect (new) were noted. Outlined the state's visual testing and ELISA testing practices, mentioning that 41% of eligible acres had virus levels below 0.5%, but the virus levels in lots were increasing. Discussed state's work on strain identification and the use of IC-PCR in DTT. Strain concerns include import restrictions and potential NTN impact on processors. Outlined testing of DTT, including timing, composite, and survey studies. Also noted that 2025 would see an expansion of DTT in the certification process.

- **Jenn Dillinger**- Nebraska Potato Certification Association (11:17-11:20)

PHT planted November 20-22, leaf testing conducted December 19-January 18 (late test January 28~). 75 lots were sprout-tested at PCAN. PVY detected in one lot and was rejected.

- **Damen Kurzer**-Michigan Potato Seed Certification Program (11:21-11:44)

Shared that Michigan's 2023 crop was its largest in state history, but PVY levels were worst since 2010. In 2024, 534 acres certified with 80% chippers, 17% russet, and 3% non-red tablestock varieties. PVY levels were better than 2023. Green peach aphids were noted overwintering in Upper Peninsula in 2024. Mentioned that poor emergence was observed in all PHT lots, with complete failure in 15%. Discussed the use of visual inspections, ELISA, and PCR to test for PVY and emphasized a new policy that lab tests would be required for all new varieties. Also noted that there were differences in PVY strain prevalence, with NTN surpassing N-Wi in 2024. Shared experiences of on-farm coring and strain surveys in identifying virus sources. Additionally, discussed research interests to investigate timing studies, dormancy, and on-farm coring optimization.

- **Benita Matheson**-Washington Potato Seed Certification (11:45-11:57)

Discussed the state of Washington's seed potato certification, with 3,123 acres entered in the program, although the acreage has been decreasing slightly each year. Noted that a change in the BRR isolation zone had been implemented in September 2023, requiring that all lots entering the isolation zone must be tested negative for BRR. During the 2024 season, 35 lots were tested for PVY, all of which came back negative. Also mentioned that one grower was dissatisfied with the PHT and was opting for greenhouse growout. Reported that seed potato isolation district appears to continue to be effective.

12:00 pm ---Break for lunch 45 min---

12:50 pm PVY Research Updates -

- **Erik Wenninger**-Unravelling Relationships Among Aphids, In-season PVY, and PVY Post-harvest-Part 1 (12:50-

Discussed the complex relationship between aphids, PVY, and the factors that influence its transmission. Highlighted that over 65 aphid species are involved in PVY transmission, with the green peach aphid using potato as a reproductive host but non-colonizing aphids are more important for transmission in most areas, including Idaho. Factors contributing to risk of PVY: PVY in seed, timing of aphid flights, PVY in aphid vectors, age-related resistance. Discussed the impact of various insecticides and crop oil treatments on PVY transmission, noting that while oil alone significantly reduced PVY compared to nontreated control, combining oil with insecticides showed a further numerical reduction. Mentioned the challenges in monitoring aphid populations and PVY spread, as aphids often originate from weeds and other crops, making them difficult to track accurately.

- **Nora Olsen**-Unravelling Relationships Among Aphids, In-season PVY, and PVY Post-harvest-Part 2

Presented her research on PVY spread in fields with monitored aphid populations. Observed that PVY increased substantially from July to August, correlating with aphid activity prior to vine kill. Also found spatial differences in PVY levels across seed lots, which indicated that the placement of seed lots within a field may affect PVY incidence. Work involved direct aphid testing using PCR, although this method was abandoned due to the large number of negative results. Findings indicate leaf sampling in August and winter growout were correlated and late-season sampling may provide potentially useful information of PVY levels (more than in June and July).

- **Alex Karasev**-Unravelling Relationships Among Aphids, In-season PVY, and PVY Post-harvest-Part 3 (1:25-1:38)

Continued the discussion on PVY strain identification from the six seed lots described previously using ELISA and RT-PCR tests. Strain O was detected in one plant and determined to be the PVY O5 type, which had not been seen in the U.S. since 2010. Overall, research detected N-Wi, NTN, and PVY O strains. Highlighted that monitoring aphid populations and abundance may correlate with PVY levels in leaf samples at the end of the season, which may help predict PVY incidence in winter growout.

1:30 pm PVY Research Updates-Continued

- **Jonathan Whitworth**-PVY Over Time, Efforts to Research and Educate (1:40-1:57)

Reviewed the changes in PVY strains over the years, noting that the primary strain used to be PVY O, but now N-Wi and NTN are more prevalent. Growers have had formative experiences with PVY O but has been largely displaced. Many latent varieties are known with Russet Burbank and Norkotah noted as particularly susceptible to PVY. Highlighted demo plot efforts from 2016, -18, -22, and -24 and the development of the University of Maine PVY symptom gallery. Also discussed efforts to bring resistance to PVY into new potato varieties, focusing on one to several *Ry* genes, which provide resistance to multiple strains and isolates (e.g., Payette, Lady Liberty, Mackinaw, Ciklamen). Announcement of PAA July 27-31, 2025 in Madison, WI.

- **John Onditi**-Characterization of the Nature of PVY Resistance in the Potato Variety Bistra (russet variety) (1:59-2:10)

Presented research on the nature of PVY resistance in the russet potato variety Bistra. Identified a quantitative trait locus (QTL) on chromosome 11, which may correspond to the *Ryadg* gene, known for extreme PVY resistance. However, current markers do not confirm its identity, as noted in Ellison et al. (2024). Grafting inoculation showed Bistra's resistance resembled extreme resistance rather than a strain-specific hypersensitive response. Bistra has Sante in its lineage, a variety with *Ryadg* and *Rysto* genes. Mentioned Castle Russet carries *Rysto*. It was noted that alternative *adg* markers were previously developed under similar uncertain conditions.

- **Andrew Houser**-The Effect PVY has on Potato Yield & Quality in Colorado (2:10-2:25)

Discussed the impact of PVY on potato yield and quality in Colorado. With the Colorado Seed Law introduced in 2012 and new plantback testing starting in 2024, studies have shown yield losses associated with different PVY strains. Field data from single-plant tests revealed that Reveille, when infected with PVY O, produced significantly fewer and smaller tubers. Norkotah 278 also suffered from reduced yield, larger tuber loss, and increased growth cracking. He emphasized that replanting clean seed is more cost-effective than using infected material, with an estimated loss of 1–3 cwt per 1% PVY infection. Early vine kill was highlighted as a crucial management strategy.

- **Nina Zidack**-PVY-How do We Address Training for Uniform Seed Potato Inspection and Testing in the US? (2:28-2:49)

Focused on strategies to improve uniform training for seed potato inspection and testing across the U.S. Suggested expanding laboratory and inspector training, creating a validation network for ring testing, and possibly developing a fee-based inspector school. Curriculum could include modules on potato certification, varietal ID, disease recognition, virus plots, and sampling strategies. Referenced the 2016 SCRI-supported inspector training and proposed leveraging PAA workshops and Potatoes USA support to establish a 2–3-day training program. Accreditation options and inclusion of agronomists were also discussed.

3:00 pm Tobacco Rattle Virus/Mop-Top/Powdery Scab/Cultivar Development Research Update

- **Kylie Swisher Grimm**-Update on TRV and PMTV Research (3:12-3:36)

Provided updates on TRV and PMTV. Highlighted the complexity of symptom expression due to possible co-infection and vector variability. Despite using two commercial nucleic acid extraction kits, detection of TRV was initially unsuccessful. Castle Russet appeared to lower TRV load, according to greenhouse studies (Quick et al. 2020). In 2023 field trials, Castle Russet showed no symptoms, while Ranger exhibited visible disease. In 2024, differences in TRV load were found in Castle Russet post-season, no differences in pre- and post-season Ranger. Additionally, reported that planting PMTV-infected seed led to detectable virus in daughter tubers, but environmental conditions and clean practices significantly influenced disease development.

- **Max Feldman**-USDA-ARS WA Potato Breeding for Virus Resistance (3:36-3:55)

Shared USDA-ARS breeding updates from the Tri-State program. Team evaluated TRV resistance in advanced lines and found low incidence of corky ringspot (CRS) in germplasm. Payette and Castle Russet emerged as promising cultivars with multiple resistances. Described tools for QTL development and genotyping platforms like the Illumina SolCap array and DArTseq, which is substantially more affordable. SNP markers TRNL and YES3A showed promise, results for TRV20/TRV490 were not clear. PA99N82-4 was noted as potentially TRV-resistant, and both male and female parents were shown to influence tuber size traits.

- **Sagar Sathuvalli**-An Update on Breeding for Resistance to Tuber Necrotic Viruses (3:56-4:12)

Confirmed Castle Russet resistance to CRS and insensitivity to PMTV. Research identified PVY *adg* resistance derived from Eva, which is also immune to PVY and PVX. QTLs for CRS were mapped to chromosome 9. And resistance to powdery scab was found in POR08BD1-3, Mesa Russet, and Summit Russet, which exhibited root galling resistance linked to two QTLs on chromosome 7. Also reported the discovery of four unique R genes in the *Ryadg* region, pending further validation.

- **Noelle Anglin**-Expect the Unexpected-PMTV the black swan of viruses (4:14-4:31)

PMTV the "black swan" of potato viruses due to its unpredictable behavior. In a three-year trial, PMTV pressure peaked in 2021 and 2023 but was lower in 2022. In 2021 and 2022, single-plant studies showed that Clearwater and Pomerelle had increased virus levels (lower Ct values) 4-5 months after harvest. Sampling across different tuber parts revealed minimal internal variation before sprouting, with more variability after sprouting but no clear pattern.

4:30 pm Diagnostic Research Updates

- Manoj Karkee-AI-enabled Robotic System for Tissue Sampling of Potato Tubers (4:32-5:04)

Presented a robotic AI-enabled system for automated tissue sampling in potato tubers. System integrates machine vision, a manipulator arm, and an end-effector to identify and extract tissue from tubers on a conveyor line. The model, based on YOLO (You Only Look Once), achieved 98.5% tuber detection accuracy and 92.4% for identifying eyes and stolon scars. The robotic system reached about 80% sampling success, with failures largely due to insufficient tissue penetration and deposition.

- Heidi Falzon-PVY Antibody Optimized for Immunocapture (5:05-5:13)

Introduced a PVY antibody optimized for immunocapture, enhancing detection through a hybrid serological-molecular approach. Unlike conventional ELISA reagents, Agdia developed monoclonal antibodies from purified PVY N-Wi and NTN strains that provided a 2–3 cycle improvement in detection compared to previous ELISA CAB antibody. The new IC antibody showed greater sensitivity and results comparable to winter growout trials. Agdia is planning direct tuber testing and pricing will be based on test volume.

- Mohamad Chikh-Ali-Duplex Immunocapture qRT-PCR for Large-scale Detection of Potato Mop-top Virus in Dormant Potato Tubers (5:14-5:21)

Duplex immunocapture RT-qPCR developed for larger-scale PMTV detection in dormant tubers. As Colorado expands fresh potato exports, especially to Mexico, emphasized the need for reliable diagnostics. Past research had issues with false negatives for PMTV isolates. Study showed improved detection when sampling stem ends and bud cores, however, false negatives were noted to increase toward the rose end. The duplex format offered reliable sensitivity and scalability for certification labs.

5:20 pm Other Business

- **Election of Secretary** (motion to nominate Mohamed Chikh-Ali by Alex Karasev, seconded Nina Zidack)
- Impact Statement, publications from 2024 (publications send to Brooke/Chaks/Jaime - will send a reminder email)

- Locations for next year's meeting and date (Austin, Tucson, Miami/Tampa Florida, San Diego or potential dates March 3-4 or 10-11)
- Will calculate meals/room fees for in person attendees - invoice together from UW-Madison email

5:30 pm Adjourn (motion to adjourn Nina Zidack, seconded by Alan Westra)

Wednesday March 12, 2025
8:00 am – 5:00 pm SCRI Research Meeting, separate agenda available

Peer-reviewed Publications

Berrian TW, Fabian ML, Rogan CJ, Anderson JC, Clarke CR, Goyer A (2024) Investigation of the effectiveness and molecular mechanisms of thiamin priming to control early blight disease in potato. *Phytopathology* (Published online 20 Nov 2024). https://doi.org/10.1094/PHYTO-09-24-0277-R

Dahan, J., G.E. Orellana, K.B. Wald, E.J. Wenninger, W. R. Cooper, and A.V. Karasev. 2024. Bactericera cockerelli Picorna-like virus and three new viruses found circulating in populations of potato/tomato psyllids (*Bactericera cockerelli*). Viruses 16(3), 415. https://doi.org/10.3390/v16030415

Funke, C.N., Tran, L.T., and Karasev, A.V. 2024. Screening three potato cultivars for resistance to potato virus Y strains: broad and strain-specific sources of resistance. American Journal of Potato Research 101: 132-141 (https://doi.org/10.1007/s12230-024-09946-6).

Gelles, N.A., N. Olsen, M.K. Thornton, and A.V. Karasev. 2024. Methods to induce sprouting in dormancy potato tubers for direct tuber testing of potato virus Y. Am. J. of Potato Research 101:312-321. https://doi.org/10.1007/s12230-024-09960-8

Gelles, N., Olsen, N., Thornton, M.K., and Karasev, A.V. 2024. Methods to induce sprouting in dormant potato tubers for direct tuber testing of potato virus Y. American Journal of Potato Research 101: 312-321 (https://doi.org/10.1007/s12230-024-09960-8).

Kamal, H., K. Kotapati, K. Tanaka, and H.R. Pappu. (2024). Investigating the roles of coat protein and triple gene block proteins of Potato mop-top virus using a heterologous expression system. *Int. J. Mol. Sci*. 25(13), 6990; https://doi.org/10.3390/ijms25136990S

Manasseh R, V. Sathuvalli, and H.R. Pappu (2024). Transcriptional and functional predictors of potato virus Y-induced tuber necrosis in potato (*Solanum tuberosum*). *Front. Plant Sci*. 15:1369846. doi: 10.3389/fpls.2024. https://doi.org/10.3389/fpls.2024.1369846

Mio Satoh-Cruz, Stefanie Rhodes, Damen Kurzer, Elizabeth Dorman, and Jaime F. Willbur. Prevalence of the *Potato Virus Y* Strain Composition Impacting Michigan Seed Potato Production. Plant Health Progress 2025 26:1, 70-75 https://doi.org/10.1094/PHP-06-24-0063-S

Swisher Grimm, K.D**.,** R.A. Quick, M.J. Feldman, and B.A. Charlton. (2025) Development of a greenhouse screen for the identification of potato mop-top virus and *Spongospora subterranea* resistance in *Solanum tuberosum.* PhytoFrontiers. httpS://doi.org/10.1094/PHYTOFR-11-24-0127-R

Torabian S, Goyer A, Qin R, Jones K, Flagg C, Phillips R, Spear R (2025) Effect of potassium fertilizer, genetic makeup, and environment on the potato tuber nutrition. *Journal of Agriculture and Food Research*. https://doi.org/10.1016/j.jafr.2025.101645

Wenninger, E.J. and A. Rashed. 2024. Biology, ecology, and management of the potato psyllid, *Bactericera cockerelli* (Hemiptera: Triozidae), and zebra chip disease in potato. Annual Review of Entomology 69: 139–157. https://doi.org/10.1146/annurev-ento-020123-014734

Xing Ma, Xiuyan Zhang, Paul Stodghill, renee Rioux, Smita Shrestha, Brooke Babler, Hannah Rivedal, Kenneth Frost, Jianjun Hao, Gary Secor and Ryan Swingle. Analysis of soft rot Pectobacteriaceae population diversity in US potato growing regions between 2015 and 2022. Frontiers in Microbiology Sept 2024. https://doi.org/10.3389/fmicb.2024.1403121

Abstracts

Dahan, J., G. Orellana, K. Wald, E. J. Wenninger, W. R. Cooper, A. V. Karasev. 2024. Three new viruses found circulating in populations of potato/tomato psyllids (*Bactericera cockerelli*). (Abstr.) Phytopathology 114: S1.36. https://doi.org/10.1094/PHYTO-114-11-S1.1.

Funke, C., L. Tran, A. V. Karasev. 2024. *Ry_{sto}* gene confers an extreme resistance to 12 strains and genetic variants of potato virus Y in potato. (Abstr.) Phytopathology 114: S1.59. https://doi.org/10.1094/PHYTO-114-11-S1.1.

Hawker, J.†, Lent, M., McKinney, L., and Duellman, K. 2024. Winged aphid captures for two potato varieties may not predict incidence of Potato virus Y in daughter tubers. Potato Association of America, 108th Annual Meeting, Portland, Oregon, July 21-25, 2024 (poster).

Olsen, N., N. Gelles, and R. Hendricks. 2024. Impact on yield in seedborne potato virus Y field studies. *American Journal of Potato Research* (abstract; in press)

Rodriguez-Rodriguez, M., M. Chikh-Ali, X. Feng, A. V. Karasev. 2024. Six recombinant variants of potato virus Y from North American potato cultivars grown in China. (Abstr.) Phytopathology 114: S1.87. https://doi.org/10.1094/PHYTO-114-11-S1.1.

Extension Bulletins

Babler, B. and Gevens, A. Direct Tuber Testing: Looking to the Future in Wisconsin. Badger Common'Tater article. Nov 2024. Pages 56-61.

Karasev, A. and N. Olsen. Slow but steady progress being made in PVY resistant potatoes. Potato Grower Magazine. April 2024. 53(4)28-29.

Ozturk, Kutay, Dill, J., McAuley S., Yarema, A., Alyokhin, A., Buzza, A. and Dwyer, J. A comprehensive collection of PVY-O, PVY-N-Wi, and PVY-NTN symptoms on 20 potato varieties. University of Maine Extension.

Whitworth, J., M. Lent, N. Olsen, A. Karasev, and K. Duellman. 2025. Necrotic potato tuber symptoms caused by strains of Potato virus Y. University of Idaho BUL 1086. (in press)