

Russell L. Groves

Professor & Department Chair

Division of Extension, State Specialist



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EDUCATION

2001	Ph.D.	Entomology	North Carolina State University, Raleigh, NC
1992	M.S.	Entomology	University of Arkansas, Fayetteville, AR
1989	B.S.	Forestry	Iowa State University, Ames, IA

PROFESSIONAL EXPERIENCE

2020-Present	Professor & Dept. Chair	Entomology, University of Wisconsin-Madison, WI
2016-2020	Professor & Assoc Chair	Entomology, University of Wisconsin-Madison, WI
2016-2020	Co-Interim Director	WI Seed Potato Certification Program
2012-2016	Associate Professor	Entomology, University of Wisconsin-Madison, WI
2009-2013	Co-Director	Center for Integrated Agricultural Systems, University of Wisconsin-Madison, WI
2006-2012	Assistant Professor	Entomology, University of Wisconsin-Madison, WI
2003-2006	Research Entomologist	USDA-ARS, SJVASC, Parlier, CA
2001-2003	Adjunct Asst. Professor	University of Maine, Orono, ME
2001-2003	Postdoctoral Fellow	Cornell University, Ithaca, NY
1998-2001	Graduate Assistant	North Carolina State University, Raleigh, NC
1996-1998	Research Specialist	North Carolina State University, Raleigh, NC
1992-1996	Research Specialist	University of Arkansas, Fayetteville, AR
1989-1992	Graduate Assistant	University of Arkansas, Fayetteville, AR

ASSOCIATE/AFFILIATE APPOINTMENTS (University of Wisconsin)

- Department of Plant Pathology, (2006 – present), <http://www.plantpath.wisc.edu/>

- **Molecular and Environmental Toxicology Center**, (2013 – present), <http://www.agroecology.wisc.edu/>
- **Agroecology Program**, (2010 – present), <http://www.agroecology.wisc.edu/>
- **Affiliate Faculty, Center for Integrated Agricultural Systems**, (2009 – Present), <http://www.cias.wisc.edu/>

SYNERGISTIC ACTIVITIES

- Steering Committee Member, CALIBER, (<https://www.fera.co.uk/our-science/active-r-and-d/our-science/caliber>). Provide technical assistance on the bacterial plant pathogen *Candidatus Liberibacter solanacearum*, its insect vectors and their potential impact on UK crops. These organisms are considered an emerging threat to agriculture in the UK and are included in the Defra Plant Health Risk Register.
- Program Review Panelist, California Citrus Research Board (CRB), 2019-2021, (<https://www.citrusresearch.org/>), The CRB administers the California Citrus Research Program, the grower-funded and grower-directed program to support needed research. Program review was held June-October, 2019 and final report issued January 2020.
- Panel member/discussant, Citrus Research Development Foundation (<https://citrusrdf.org/>) – Bayer Crop Science “CRDF Oversight Committee- Investment” (December 2019). Oversight committee conducted an assessment of the Citrus Research and Development Foundation (CRDF) investment with Bayer Crop Science under a NDA for a \$12M re-investment.
- Review Committee Member, National Academy of Sciences, Engineering and Medicine (NASEM) “A Review of the Citrus Greening Research and Development Efforts Supported by the Citrus Research and Development Foundation: Fighting a Ravaging Disease” (February 2017 – June 2018), (<http://dels.nas.edu/Study-In-Progress/Review-Citrus-Greening/DELS-BANR-16-04>).
- Co-State Liaison for the IR-4 Federal Project (2006-Present), Minor Crops Pest Management. State of Wisconsin for the IR-4 Project, the goal is to develop data to support and to expedite regulatory clearances of newer, reduced risk pest control products for specialty crop growers (<http://ir4.rutgers.edu/>).
- Research Advisory Board, Co-chair (2011-present), Citrus Research Development Foundation (CRDF; <https://citrusrdf.org/>). Citrus Research Development Foundation’s, Research Advisory Panel to assist in setting research priorities, reviewing, ranking, and making funding decisions for the Grower Committee.

HONORS and AWARDS

- 2017 – Wisconsin Seed Potato Industry Leadership Award, For, ‘Outstanding Service and Leadership to the Wisconsin Seed Potato Industry’. Wisconsin Seed Potato Improvement Association, Antigo, WI (January 2017).
- 2016 - University of Arkansas, Dale Bumpers College of Agricultural and Life Sciences, Distinguished Alumnus Award. Submitted by the Department of Entomology, Fayetteville, AR.
- 2015 – UW ARS Researcher Award, University of Wisconsin, Agricultural Research Stations, College of Agricultural and Life Sciences (December 2015).
- 2014 – Second Mile Award. UWEX WACAA, LaCrosse, Wisconsin, Wisconsin Association of County Agricultural Agents Annual Meeting (February 2014).
- 2013 - Glen Pound Extension Award. College of Agriculture and Life Sciences, Madison, Wisconsin (April 24 2013).
- 2010 - 2011 Chicago/ Midwest Emmy Award for Outstanding Achievement for Children/ Youth/ Teen Programming. Chicago/ Midwest Chapter of the National Academy of Television Arts and Sciences, Chicago, IL.

2011 - Outstanding National Extension Project Award. Potato Association of America, 95th Annual PAA Meeting.

2009 – Researcher of the Year - Wisconsin Potato and Vegetable Growers Association, Antigo, WI.

2001 – Kenneth R. Keller Outstanding Doctoral Research Award, College of Agriculture and Life Sciences, N.C. State University

FUNDING (Contracted \$12.5 M, UW-Madison portion; total contracted \$26.7 M, since October 2016)

2020

- USDA SCRI CAP (99,873.00) (Groves, R.L.) - Development of sustainable system-based management for tuber necrotic viruses in potato (2020-2024).
- FY2021, (\$72,097.00) (Groves, R.L., Parsen, M., Bradford, B., D. Hart) - Joint Solicitation, Wisconsin Groundwater Research and Monitoring Program. Neonicotinoid contaminants in Wisconsin groundwater: relationships to landscape cropping system (2021-2023).
- USDA SCRI SCBG Program (\$99,684.00) (Groves R.L.) - Predicting aphid flight dynamics. (2021-2023).
- UW WisCORE. (\$91,929) (Groves, R.L.) Integrated Pest Management in Organic Agriculture – Development of Web-Based Forecasting and Resource Guides. (2021-2023).
- FY20 USDA ARS Potato (\$89,097) (Groves, R.L. and Bethke, P.) - Insecticide resistance influences the emergence phenology of the Colorado potato beetle – implications for management (Year 2 submission). (2020-2022).

2019

- WI Potato Industry Board (\$44,500.00) (Groves, R.L. and S. Chapman) – Base & competitive funding submissions (2019)
- FY19 USDA ARS Potato (\$74,797.00) (Groves, R.L.) - Evaluation of heavy metals (Year 2) (2019)
- FY19 USDA ARS Potato (\$20,000.00) (Gray, S.M. and Groves, R.L.) - Updating potato seed certification (Year 2) (2019)
- FY19 USDA ARS Potato (\$75,097.00) (Groves, R.L.) - Insecticide resistance influences the emergence (2019-2021)
- USDA SCRI SCBG Program (\$99,303.00) (Groves, R.L., Colquhoun, J. & Gevens, A.J.) - Increasing precision IPM (2019-2021)
- USDA Hatch Formula 142 (\$122,092.00) (Barak, J.D. and Groves, R.L.) – Phytophagous Hemipterans influence HEBPs. (2019-2023)
- USDA Hatch Formula 142 (\$83,421.00) (Gevens, A.J. and Groves, R.L.) – Advancing precision IPM. (2019-2021)
- USDA-ARS NACA (\$38,818.00) (Groves, R.L. and Simon, P.) - Carrot germplasm evaluations (2019)
- USDA NCR IR-4 (\$33,488.00) (Groves, R.L. and Chapman, S.A.) – Minor use crop evaluations (2019)

2018

- WI Potato Industry Board (\$42,700.00) (Groves, R.L. and S. Chapman) – Base and competitive funding submissions (2018)
- FY18 USDA ARS Potato (\$71,000.00) (Groves, R.L.) - Evaluation of heavy metals (Year 1) (2018)
- USDA AFRI OREI (\$179,178.00) (Groves, R.L. and Havey, M.J.) (2018-2021)
- Wisconsin Alumni Research (\$30,300.00) (Groves, R.L.) Vegetable Entomology, UW Foundation (2018)
- Fee for Service Acct (136) (\$144,489.00) (Groves, R.L.) Contract Research, UW Foundation (2018)

2017

- WI Potato Industry Board (\$45,169.00) (Groves, R.L. and S. Chapman) – Base and competitive funding submissions (2017)
- Midwest Food Processors Association (\$18,000.00) (Groves, R.L.) – Pesticide detections in floral structures (2017)
- National Potato Council (\$55,000.00) (Groves R.L.) – PVY phenology modeling (2017)
- WARF Draper (\$45,131.00) (Groves, R.L. & Cook, M.) Conjugated linoleic acid influence on survivorship (2017)
- Wisconsin Alumni Research (\$149,015.00) (Groves, R.L.) Vegetable Entomology, UW Foundation (2017)
- Fee for Service Acct (136) (\$164,020.00) (Groves, R.L.) Contract Research, UW Foundation (2017)

2016

- WI Potato Industry Board (\$46,327.35) (Groves, R.L. and S. Chapman) – Base and competitive funding submissions (2017)
- Wisconsin Alumni Research (\$107,560.00) (Groves, R.L.) Vegetable Entomology, UW Foundation (2016)
- Fee for Service Acct (136) (\$130,532.33) (Groves, R.L.) Contract Research, UW Foundation (2016)
- USDA-NIFA OREI (\$418,330.90) (Charkowski, A.O., Genger, R., Groves, R.L. and Rouse, D.) Organic potato management to limit disease (2015-2017)
- USDA NIFA SCRI (\$152,000.00) (Bland, B., Colquhoun, J., Gevens, A., Groves, R.L., Mitchell, P. and Ruark, M.) Sustainable vegetable processing crops production (2014-2016)
- Human Frontiers in Science (\$242,224.00) (Hogenhout, S., Immink, R., Maree, A., Pospieszny, H. and Groves, R.L.) Predictive modeling of AYp vir genes (2014-2016)

PUBLICATIONS (In-preparation)**20XX**

Garcia, M., Clements, J., Bradford, B., Crubaugh, L., Piper, S., Hogenhout, S. and Groves, R.L. 20XX. Aster Yellow phytoplasma subclades differentially colonize tissues of resistant and susceptible field-grown carrot cultivars. *Phytopathology*, (PHYT12-01-20; submitted December 2020).

Tomkins, M., Hogenhout, S., Groves, R.L. and Maree, A. 20XX. The inevitability of spatial patterning in vector-borne disease and its implications for pathogen evolution. *Molecul. Pl. Micro. Inter.* 33:(submitted October 2020).

Mishra, S., Dee, J., Moar, W., Dufner-Beattie, J., Baum, J., Pinto Dias, N., Alyokhin, A., Buzza, A., Rondon, S.I., Clough, M., Menasha, S., Groves, R.L., Clements, J., Ostlie, K., Felton, G., Waters, T., Snyder, W.E. and Jurat-Fuentes, J.L. 20XX. Selection for high levels of resistance to double-stranded RNA (dsRNA) in Colorado potato beetles (*Leptinotarsa decemlineata* Say) using non-transformative foliar delivery. *Sci. Reports*: (submitted December 2020).

PUBLICATIONS (In-press)**2020**

Clements, J.R., Lamour, K., Frost, K., Dywer, J., Huseh, A. and Groves, R.L. 20XX. Targeted RNA sequencing within *Leptinotarsa decemlineata* populations reveal patterns of transcript expression correlated with insecticide resistance in discrete geographic locations. *PLoS ONE*, (accepted with revisions, November 26, 2020.)

Lason, V., Groves, R.L., Maurice, M. and Barak, J. 20XX. *Frankliniella occidentalis* facilitate *Salmonella enterica* survival in the phyllosphere. *PLoS ONE*, (accepted with revisions December 12, 2020).

PUBLICATIONS (Refereed)**2020**

Lagos-Kutz, D., Voegtlin, D.J., Onstad, D., Hogg, D., Ragsdale, D., Tilmon, K., Hodgson, E. Difonzo, C., **Groves, R.L.**, JLaforest, J., Seiter, N.J., Duerr, E., Bradford, B., Hartman, G.L. 2020. The Soybean Aphid Suction Trap Network: Sampling the Aerobiological “Soup”, *American Entomologist*, 66(1)
<https://doi.org/10.1093/ae/tmaa009>.

Clements, J.R., Olson, J.M., Sanchez-Sedillo, B., Bradford, B.Z. and **Groves, R.L.** 2020. Changes in emergence phenology, fatty acid composition, and xenobiotic-metabolizing enzyme expression is associated with increased insecticide resistance in the Colorado potato beetle. Arch. Ins. Biochem. And Physiol. <https://doi.org/10.1002/arch.21630>.

Kamiyama, M.T., Bradford, B.Z., **Groves, R.L.** and Guédot, C. 2020. Degree day models to forecast the seasonal phenology of *Drosophila suzukii* in tart cherry orchards in the Midwest U.S. PLoS One. <https://doi.org/10.1371/journal.pone.0227726>.

Clements, J.R., Garcia, M., Bradford, B.Z., Crubaugh, L., Piper, S., Duerr, E., Zwolinska, A., Hogenhout, S., and **Groves, R.L.** 2020. Genetic Variation Among Geographically Disparate Isolates of Aster Yellow Phytoplasma in the Contiguous United States. J. Econ. Entomol. 113(2) <https://doi.org/10.1093/jee/toz356>.

Iglesias, L., **Groves, R.L.**, Bradford, B.Z., Harding, R.S. and Nault, B.A. 2020. Evaluating combinations of bioinsecticides and adjuvants for managing *Thrips tabaci* (Thysanoptera: Thripidae) in onion production systems Crop Prot. <https://doi.org/10.1016/j.cropro.2020.105527>.

Doğan, C., Hänniger, S., Heckel, D.G., Coutu, C., Hegedus, D.D., Crubaugh, L., **Groves, R.L.**, Bayram, S. and Toprak, U. 2020. Two calcium-binding chaperones from the fat body of the Colorado potato beetle, *Leptinotarsa decemlineata* (Coleoptera: Chrysomelidae) involved in diapause. Arch. Insect Biochem. Physiol. <https://doi.org/10.1002/arch.21755>.

2019

Munaiz, E.D., **Groves, R.L.** and Havey, M.J. 2019. Amounts and types of epicuticular leaf waxes among onion accessions selected for reduced damage by onion thrips. Amer. Soc. Hort. Sci., <https://doi.org/10.21273/JASHS04773-19>.

Claflin, S.B., Hernandez, N. **Groves, R.L.**, Thaler, J.S. and Power, A.G. 2019. Intra-annual variation and landscape composition interactively affect aphid community composition. Ecosphere 10(5), <https://doi.org/10.1002/ecs2.2710>.

Clements, J., **Groves, R.L.**, Cava, J., Barry, C.C., Chapman, S., and Olson, J.M. 2019. Conjugated linoleic acid as a novel insecticide targeting the agricultural pest *Leptinotarsa decemlineata*. PLoS ONE 14(11):e0220830. <https://doi.org/10.1371/journal.pone.0220830>.

2018

Couture, J.J., Singh, A., Charkowski, A.O., **Groves, R.L.**, Gray, S.M., Bethke, P.C., and Townsend, P.A. 2018. Integrating spectroscopy with potato disease management. Pl. Dis. 102: 2233-2240 <https://doi.org/10.1094/PDIS-01-18-0054-RE>.

Suryanarayanan, S., Kleinman, D.L., Gratton, C., Toth, A., Guedot, C., **Groves, R.L.**, Piechowski, J., Moore, B., Hagedorn, D., Kauth, D., Swan, H. and Celley, M. 2018. Collaboration matters: Honey bee health as a transdisciplinary model for understanding real-world complexity. BioScience. 68:990–995 <https://doi.org/10.1093/biosci/biy118>.

Bradford, B.Z., Huseeth, A.S. and **Groves, R.L.** 2018. Widespread detections of neonicotinoid contaminants in central Wisconsin groundwater. PLoS ONE 13:e0201753 (<https://doi.org/10.1371/journal.pone.0201753>).

Karp, D.S. et al.(and 157 co-authors). 2018. Crop pests and predators exhibit inconsistent responses to surrounding landscape composition. PNAS 115(33):E7863-E7870 (<https://doi.org/10.1073/pnas.1800042115>).

Cowles, K.N., **Groves, R.L.** and Barak, J.D. 2018. Leafhopper-induced activation of the jasmonic acid response benefits *Salmonella enterica* in a flagellum-dependent manner. *Front. Microbiol.* (<https://doi.org/10.3389/fmicb.2018.01987>).

Clements, J.R., Schoville, S., Clements, A., Amezian, D., Davis, T., Sanchez-Sedillo, B., Bradfield, B., Huseeth, A.S. and **Groves, R.L.** 2018. Agricultural fungicides inadvertently influence the fitness of Colorado potato beetles, *Leptinotarsa decemlineata*, and their susceptibility to insecticides. *Scientific Reports* 8:13282 (<http://dx.doi.org/10.1038/s41598-018-31663-4>).

Clements, J.R., Sanchez-Sedillo, B., Bradfield, B. and **Groves, R.L.** 2018. Transcriptomic analysis reveals similarities in genetic activation of detoxification mechanisms resulting from imidacloprid and chlorothalonil exposure. *PLoS ONE* 13(10): e0205881 (<https://doi.org/10.1371/journal.pone.0205881>).

2017

Clements, J.R., Schoville, S., Peterson, N., Huseeth, A.S., Lan, Q. and **Groves, R.L.** 2017. RNA interference of three up-regulated transcripts associated with insecticide resistance in an imidacloprid resistant population of *Leptinotarsa decemlineata*. *Pesticide Biochemistry and Physiology*, 135:35-40. (<https://doi.org/10.1016/j.pestbp.2016.07.001>).

Clements, J., Schoville, S., Clements, N., Chapman, S. and **Groves, R.L.** 2017. Temporal patterns of imidacloprid resistance throughout a growing season in *Leptinotarsa decemlineata* populations. *Pest Manag. Sci.*, 73(3):641-650. (<http://dx.doi:10.1002/ps.4480>).

Fulladolsa-Palma, A.C., LaPlant, K.E., **Groves, R.L.** and Charkowski, A.O. 2017. Potato plants grown from minitubers are delayed in maturity and lower in yield, but are not at a higher risk of Potato virus Y infection than plants grown from conventional seed. *Amer. J. Pot. Res.*, 44:1-9. (<https://doi.org/10.1007/s12230-017-9613-1>).

Crossley, M.S., Chen, Y.H., **Groves, R.L.** and Schoville, S. 2017. Landscape genomics of Colorado potato beetle provides evidence of polygenic adaptation to insecticides. *Mol. Ecol.*, 26:6284–6300. (<https://doi.org/10.1111/mec.14339>).

2016

Clements, J., Schoville, S., Peterson, N., Lan, Q. and **Groves, R.L.** 2016. Characterizing molecular mechanisms of imidacloprid resistance in select populations of *Leptinotarsa decemlineata* in the Central Sands region of Wisconsin. *PLoS ONE* 11(1): e0147844. (<https://dx.doi.org/10.1371/journal.pone.0147844>).

Bloomingdale, C., Irizarry, M.D., **Groves, R.L.**, Mueller, D.S. and Smith, D.F. 2016. Seasonal Population Dynamics of Thrips (Thysanoptera) in Wisconsin and Iowa Soybean Fields. *J. Econ Entomol.* (<http://dx.doi:10.1093/jee/tow242>).

2015

Dundore-Arias J.P., **Groves, R.L.** and Barak, J.D. 2015. Influence of prgH on the persistence of ingested *Salmonella enterica* in the leafhopper *Macrosteles quadrilineatus*. *Appl. Environ. Microbiol.*, 81:6345–6354. (<http://dx.doi:10.1128/AEM.01464-15>).

Gratton, C., Casler, M., **Groves, R.L.** and Kim, T.N. 2015. Insecticide applications have minor effects on switchgrass biomass and yield. *Agron. J.* 107:2031–2037. (<http://dx.doi:10.2134/agronj15.0066>).

Lin, H., Islam, M., Cabrera-La Rosa, J.C., Civerolo, E.L. and **Groves, R.L.** 2015. Population structure of *Xylella fastidiosa* associated with almond leaf scorch disease in the San Joaquin Valley of California. *Phytopathol.* 105(6):825-832. (<http://dx.doi.org/10.1094/PHYTO-09-14-0254-R>).

Huseth, A.S., **Groves, R.L.**, Chapman, S.A. and Nault, B.A. 2015. Evaluation of diamide insecticides co-applied with other agrochemicals at various times to manage *Ostrinia nubilalis* in processing snap bean. *Pest Mgmt. Sci.* 71(12):1649-1656. <http://dx.doi:10.1002/ps.397>.

Huseth, A.S., Peterson, J.D., Poveda, K., Szendrei, Z., Nault, B.A., Kennedy, G.G. and **Groves, R.L.** 2015. Spatial and temporal potato intensification drives insecticide resistance in the specialist herbivore, *Leptinotarsa decemlineata*. *PLoS ONE* 10(6):1-17. <http://dx.doi:10.1371/journal.pone.0127576>.

Bloomingtondale, C., Bradley, C., Chilvers, M., Giesler, L., **Groves, R.L.**, Mueller, D., Smith, D., Tenuta, A. and Wise, K. 2015. Soybean Vein Necrosis Virus – Soybean Disease Management. *Crop Protection Network*. (CPN-1003), pp.1-7.

2014

Huseth, A.S., **Groves, R.L.**, Chapman, S.A., Alyokhin, A., Kuhar, T.P., McRae, I.V., Szendrei, Z. and Nault, B.A. 2014. Managing Colorado Potato Beetle Insecticide Resistance: New Tools and Strategies for the Next Decade of Pest Control in Potato. *J. Integ. Pest Mgmt.* 5(4), <http://dx.doi.org/10.1603/IPM14009>.

Soto-Arias, J. P., **Groves, R.L.** and Barak, J.D. 2014. Transmission and Retention of *Salmonella enterica* by Phytophagous Hemipteran Insects. *Appl. Environ. Microbiol.* 80(17):5447-5456. <http://doi:10.1128/AEM.01444-14>.

Nouri S., Arevalo, R., Falk, B.W., and **Groves R.L.** 2014. Genetic Structure and Molecular Variability of Cucumber mosaic virus isolates in the United States. *PLoS ONE* 9(5): e96582. <http://dx.doi:10.1371/journal.pone.0096582>.

Huseth A.S. and **Groves, R.L.** 2014. Environmental Fate of Soil Applied Neonicotinoid Insecticides in an Irrigated Potato Agroecosystem. *PLoS ONE* 9(5): e97081. <http://dx.doi:10.1371/journal.pone.0097081>.

Soto-Arias, J.P., **Groves, R.L.**, Barak, J.D. 2014. Interaction of Phytophagous Insects with *Salmonella enterica* on Plants and Enhanced Persistence of the Pathogen with *Macrostelus quadrilineatus* Infestation or *Frankliniella occidentalis* Feeding. *PLoS ONE*, <http://dx.doi:10.1371/journal.pone.0079404>.

Huseth, A.S., Lindholm, J., Groves, C.L., and **Groves, R.L.** 2014. Variable concentration of soil-applied insecticides in potato over time: implications for management of *Leptinotarsa decemlineata*. *Pest Mgmt. Sci.* 70:1863-1871.

Damon, S.J., **Groves, R.L.** and Havey, M.J. 2014. Variation for epicuticular waxes on onion foliage and impacts on numbers of onion thrips. *J. Amer. Soc. Hort. Sci.*, 139(4):495–501.

2013

Huseth, A. S. and **Groves, R.L.** 2013. Effect of Insecticide Management History on Emergence Phenology and Neonicotinoid Resistance in *Leptinotarsa decemlineata* (Coleoptera: Chrysomelidae). *J. Econ. Entomol.* 106:2267-2684.

Frost, K. E., Esker, P. D., Van Haren, R., Kotolski, L., **Groves, R.L.** 2013. Factors Influencing Aster Leafhopper (Hemiptera: Cicadellidae) Abundance and Aster Yellows Phytoplasma Infectivity in Wisconsin Carrot Fields. *Environ. Entomol.* 42: 477-490.

Frost, K. E., Esker, P. D., Van Haren, R., Kotolski, L., **Groves, R.L.** 2013. Seasonal Patterns of Aster Leafhopper (Hemiptera: Cicadellidae) Abundance and Aster Yellows Phytoplasma Infectivity in Wisconsin Carrot Fields. *Environ. Entomol.* 42:491-502.

Frost, K. E., Charkowski, A.O., **Groves, R.L.** 2013. Integrated Control of Potato Pathogens Through Seed Potato Certification and Provision of Clean Seed Potatoes. *Plant Dis.* 97:1268-1280.

Hagler, J.R., Blackmer, F., Krugner, R., **Groves, R.L.**, Morse, J.G., and Johnson, M.W. 2013. Gut content examination of the citrus predator assemblage for the presence of *Homalodisca vitripennis* remains. *Biocontrol* 58:341-349.

Soto-Arias, J.P., **Groves, R.L.**, Barak, J.D. 2013. Interaction of Phytophagous Insects with *Salmonella enterica* on Plants and Enhanced Persistence of the Pathogen with *Macrostes quadrilineatus* Infestation or *Frankliniella occidentalis* Feeding. PLoS One, DOI: 10.1371/journal.pone.0079404

2012

Sisterson, M., K. Daane, C. Ledbetter, B. Higbee, J. Chen, and **Groves, R.L.** 2012. Management of almond leaf scorch disease: long term data on yield, tree vitality, and disease progress. Plant Dis. 96.

Lowenstein, D.M., A.S. Huseh, and **Groves, R.L.** 2012. Response of wild bees (Hymenoptera: Apoidea: Anthophila) to surrounding land cover in Wisconsin pickling cucumber. Environ. Entomol. 41.

Mueller, E.E., **Groves, R.L.**, and C. Gratton. 2012. Crop and non-crop plants as potential reservoir hosts for alfalfa mosaic virus and cucumber mosaic virus for spread to succulent snap bean, *Phaseolus vulgaris*. Plant Dis. 96.

2011

Frost, K.E., D.K. Willis, and **R.L. Groves**. 2011. Variation in aster yellows phytoplasma (*Candidatus Phytoplasma asteris*) titer in its insect vector, *Macrostes quadrilineatus*. J. Econ. Entomol. 104:1800-1815.

Nouri, S., B.W. Falk, **R.L. Groves**. 2011. A new satellite RNA is associated with natural infections of cucumber mosaic virus in succulent snap bean. Arch. Virol. 157(2):375-377.

Del Pilar Marquez-Villavicencio, M., **R.L. Groves**, and A.O. Charkowski. 2011. Soft rot disease severity is affected by potato physiology and *Pectobacterium taxa*. Plant Dis. 95: 232-241.

2010

Son, Y., **R.L. Groves**, K.M. Daane, D.J.W. Morgan, R. Krugner, and M.W. Johnson. 2010. Estimation of feeding threshold for *Homalodisca vitripennis* (Hemiptera: Cicadellidae) and its application to prediction of overwintering mortality. Environ. Entomol. 39:1264-1275.

Sisterson, M.S., **R.L. Groves**, S.R. Thammiraju, K. Lynn-Patterson, and K.M. Daane. 2010. Epidemiology of diseases caused by *Xylella fastidiosa* in California: evaluation of alfalfa as a source of vectors and inocula. Plant Dis. 94:827-834.

Sisterson, M.S., Thammiraju, S.R., Lynn-Patterson, K., **R.L. Groves**, and K.M. Daane. 2010. Epidemiology of diseases caused by *Xylella fastidiosa* in California: evaluation of alfalfa as a source of vectors and inocula. Plant. Dis. 94(7): 827-834.

Son, Y., **R.L. Groves**, K.M. Daane, D.J.W. Morgan, R. Krugner, and M.W. Johnson. 2010. Estimation of feeding threshold for *Homalodisca vitripennis* (Hemiptera: Cicadellidae) and its application to prediction of overwintering mortality. Environ. Entomol. 39(4):1264-1275.

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Groves, R.L., Bradford, B.Z., Chapman, S.A. Crubaugh, L.K. 2020. Colorado Potato Beetle Foliar Management Trial, Antigo, WI, - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 33:1-8 pp. (<http://wpvga.conferencespot.org/71036-wpvga-1.4585087/t003-1.4585181/t003-1.4585182/a044-1.4585213/an044-1.4585214>).

Groves, R.L., Bradford, B.Z., Chapman, S.A. Crubaugh, L.K. 2020. Full-Season Colorado Potato Beetle Management Trial, Antigo, WI, - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 33:1-10 pp. (<http://wpvga.conferencespot.org/71036-wpvga-1.4585087/t003-1.4585181/t003-1.4585182/a045-1.4585210/an045-1.4585211>).

Groves, R.L., Bradford, B.Z., Chapman, S.A. Crubaugh, L.K. 2020. Potato Virus Y Management Trial, Antigo, WI, - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 33:1-2 pp. (<http://wpvga.conferencespot.org/71036-wpvga-1.4585087/t003-1.4585181/t003-1.4585182/a046-1.4585207/an046-1.4585208>).

2019

Piper, S.B., Clements, J.R. and **Groves, R.L.** 2019. Entomological Society of America. *'Influence of xenobiotic inputs on microbial composition and presence of aster yellows phytoplasma in Macrosteles quadrilineatus (Hemiptera: Cicadellidae).'*. University of Wisconsin, Madison, WI. TMP Competition 10 min presentation, November 18, St Louis Convention Center, St., Louis, MO, (<https://www.entsoc.org/sites/default/files/files/2019%20ESA%20Annual%20Meeting-Program-web.pdf>).

Lason, V., Barak, J.D. and **Groves, R.L.** 2019. Entomological Society of America. *'Intracellular penetration by Macrosteles quadrilineatus enhances Salmonella enterica persistence in the phyllosphere.'*. University of

Wisconsin, Madison, WI. TMP Competition 10 min presentation, November 18, St Louis Convention Center, St. Louis, MO, (<https://www.entsoc.org/sites/default/files/files/2019%20ESA%20Annual%20Meeting-Program-web.pdf>).

Sanchez-Sedillo, B., Clements, J.R., Olson, J., Bradford, B.Z., Crubaugh, L. and **Groves, R.L.** 2019. Entomological Society of America, North Central Branch Meeting. '*Lipid composition of *Leptinotarsa decemlineata* and its relationship to insecticide resistance.*' University of Wisconsin, Madison, WI. Poster presentation, March 19, Hyatt Regency, Cincinnati, OH. (https://www.entsoc.org/sites/default/files/files/2019_North_Central_Branch_Program_Book.pdf).

Clements, J.R., Sanchez-Sedillo, B., Bradford, B.Z., Crubaugh, L., Olson, J. and **Groves, R.L.** 2019. Entomological Society of America, North Central Branch Meeting. '*Leptinotarsa decemlineata* temporal patterns of delayed emergence results in increased insecticide resistance to agriculturally relevant insecticides.' University of Wisconsin, Madison, WI. Symposia presentation, March 19, Hyatt Regency, Cincinnati, OH. (https://www.entsoc.org/sites/default/files/files/2019_North_Central_Branch_Program_Book.pdf).

Clements, J.R. and **Groves, R.L.** 2019. Fungicides as inadvertent drivers of insecticide resistance. *In* Proceedings of the 2019 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 32:1-4 pp. (<http://wpvga.conferencespot.org/68525-wpvga-1.4381005/j-clements-1.4381017>).

Bradford, B. and **Groves, R.L.** 2019. Neonicotinoid insecticide contamination in groundwater-fed streams in central Wisconsin. *In* Proceedings of the 2019 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 32:1-6 pp. (<http://wpvga.conferencespot.org/65991-wpvga-1.4068621/b-bradford-1.4068675>).

Groves, R.L. 2019. Potato virus Y management: targeting aphid flights. *In* Proceedings of the 2019 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 32:1-3 pp. (<http://wpvga.conferencespot.org/68525-wpvga-1.4381005/russ-groves-1.4381054>).

Groves, R.L. 2019. Seed treatment and foliar control options for onion insect management. *In* Proceedings of the 2019 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 32:1-5 pp. (<http://wpvga.conferencespot.org/68525-wpvga-1.4381005/russ-groves-1.4381055>).

Bradford, B.Z. and **Groves, R.L.** 2019. An Overview of Neonicotinoid in Insecticide Contaminants in Central Wisconsin's Surface and Groundwater Systems. *In* Proceedings of the 2019 Wisconsin Agribusiness Classic, Conference Abstracts, January 15-17th, Alliant Energy Center, Madison, WI, pp. 19-25, (<https://www.agclassic.org/proceedings/2019proceedings.pdf>).

Clements, J.C. and **Groves, R.L.** 2019. Fungicides as Inadvertent Drivers of Insecticide Resistance. *In* Proceedings of the 2019 Wisconsin Agribusiness Classic, Conference Abstracts, January 15-17th, Alliant Energy Center, Madison, WI, pp. 57-60, (<https://www.agclassic.org/proceedings/2019proceedings.pdf>).

Groves, R.L. 2019. *Allium Insect Management (Thrips, Maggots and Emerging Pests)*. January 29, Kalahari Resort and Conference Center, Wisconsin Dells, WI.

Groves, R.L. 2019. Predicting risk for Potato virus Y transmission. *In* Proceedings of the 2019 Wisconsin Certified Seed Potato Program, Annual Meeting Abstracts, January 30, 2019, Antigo, WI (<http://potatoseed.org/>).

2018

Clements, J.C. and **Groves, R.L.** 2018. Entomological Society of America, Joint Annual Meeting. *Fungicides as inadvertent drivers of insecticide resistance*. P-IE Section Symposia, November 12, Vancouver Convention Centre, Vancouver, BC.

Lason, V., Maurice, M. Barak, J. and **Groves, R.L.** 2018. Entomological Society of America, Joint Annual Meeting. *Areas of macroscopic damage caused by western flower thrips (*Frankliniella occidentalis*) exhibit greater cellular damage and promote *Salmonella enterica* populations*. TMP Competition 10 min presentation, November 12, Vancouver Convention Centre, Vancouver, BC.

Piper, S., Graniero, A., Clements, J.R., Garcia, M., Brady, L. and **Groves, R.L.** 2018. Entomological Society of America, Joint Annual Meeting. *Geographic variation in microbial associates of the aster leafhopper, *Macrosteles quadrilineatus* (Hemiptera: Cicadellidae), a vector of aster yellows phytoplasma*. TMP Competition 10 min presentation, November 12, Vancouver Convention Centre, Vancouver, BC.

Lason, V., Barak, J. and **Groves, R.L.** 2018. Entomological Society of America, North Central Branch Meeting. *Connecting insects and human enteric bacterial pathogens: Using electrical conductivity as a proxy for direct plant damage caused by *Macrosteles quadrilineatus* in lettuce and tomato*. Program Symposia, March 21, Madison Marriott West, Madison, WI.

Groves, R.L. and Bradford, B.Z. 2018. Entomological Society of America, North Central Branch Meeting. *Evidence for delayed emergence in Colorado potato beetle – Management implications*. Program Symposia, March 21, Madison Marriott West, Madison, WI.

Groves, R.L., Clements, J.R., Chapman, S., and Bradford, B. 2018. *Insect management over an extended season*. In Proceedings of the 2018 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 6-8, Steven's Point, WI.

Bradford, B. and **Groves, R.L.** 2018. *Pesticide contaminants in groundwater-fed streams*. In Proceedings of the 2018 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 6-8, Steven's Point, WI.

Groves, R.L. 2018. *Genetic Pest Control Options - RNAi and CRISPR technology: Understanding the basics of future pest management using genetic solution*. January 11th, Alliant Energy Center, Madison, WI.

Groves, R.L. 2018. *Pollinator Protection Label Amendments - Risks Posed by Pesticides*. January 22, Kalahari Resort and Conference Center, Wisconsin Dells, WI.

Groves, R.L. 2018. *Organic vegetable insect management*. February 2, Alliant Energy Center, Madison, WI.

Groves, R.L. 2018. *Fungicides as inadvertent drivers of insecticide resistance in Colorado potato beetles (*Leptinotarsa decemlineata*)*. January 31, Northstar Lanes, Antigo, WI.

2017

Entomological Society of America, Annual Meeting. 2017. Chen, Y., Crossley, M., **Groves, R.L.**, and Schoville, S. Landscape genomics of Colorado potato beetle provides evidence of polygenic adaptation to insecticides. Member Symposium, November 5-8, Denver Convention Center, Denver, CO.

Entomological Society of America, Annual Meeting. 2017. Chen, Y., Crossley, M., **Groves, R.L.**, and Schoville, S. Fungicides as inadvertent drivers of insecticide resistance in Colorado potato beetles (*Leptinotarsa decemlineata*). PBT 10 min presentation, November 5-8, Denver Convention Center, Denver, CO.

Entomological Society of America, Annual Meeting. 2017. Chen, Y., Crossley, M., **Groves, R.L.**, Clements, J.R., Crubaugh, L., Duerr, E.J., Garcia, M., Hogenhout, S., Immink, R., Maree, S., and Zwolinska, A. Seasonal and spatial patterns of aster yellows phytoplasma infectivity and pathogen diversity in Wisconsin carrots. Member Symposium, November 5-8, Denver Convention Center, Denver, CO.

Entomological Society of America, Annual Meeting. 2017. Alyokhin, A., Beg, S., Benedict, C., Dill, J., Dwyer, J., Frost, K., **Groves, R.**, Lagos-Kutz, D., Rondon, S. and Wenninger, E. Multistate effort to understand aphid diversity and PVY spread in potatoes in the United States. Poster presentation (D3529), November 5-8, Denver Convention Center, Denver, CO.

Groves, R.L. and Chapman, S.A. 2017. Evidence for Delayed Emergence in Colorado Potato Beetle – Management Implications. In Proceedings of the 2017 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 7-9, Steven's Point, WI.

Groves, R.L. and Bradford, B. 2017. Pesticide Detections in Central Wisconsin Groundwater. In Proceedings of the 2017 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 2-4, Steven's Point, WI.

Groves, R.L., Prince, K.J and Bradford, B.Z. 2017. Neonicotinoid insecticides and IPM in processing vegetables. January 12th, Alliant Energy Center, Madison, WI.

Groves, R.L. 2017. Management of early-season cabbage maggot and flea beetle in cole crops. January 22-24, Kalahari Resort and Conference Center, Wisconsin Dells, WI.

Groves, R.L. 2017. Predicting the arrival of striped cucumber beetle and squash vine borer. January 22-24, Kalahari Resort and Conference Center, Wisconsin Dells, WI.

Groves, R.L. 2017. Materials as a last resort. February 23-25, Radisson Convention Center, LaCrosse, WI.

Groves, R.L. 2017. Prediction of aphid flights and timing of management. January 25, Northstar Lanes, Antigo, WI.

Groves, R.L. 2017. New management tactics for the control of seed maggots. March 1, Holiday Inn and Convention Center, Green Bay, WI.

2016

North Central Branch, Entomological Society of America, Undergraduate and MS Student TMP Competition, P-IE Session. 2016. "*Neonicotinoid Detections in Wisconsin*

Groundwater; Implications for Pollinator Health.", Bradford, B.Z. and **Groves, R.L.** University of Wisconsin, NCB ESA Annual Meeting, Cleveland, OH, June 5-8, 2016.

North Central Branch, Entomological Society of America, Undergraduate and MS Student TMP Competition, P-IE Session. 2016. "*Wild Bee Abundance and Diversity in*

Wisconsin Vegetable Crops.", Prince, K.J. and **Groves, R.L.** University of Wisconsin, NCB ESA Annual Meeting, Cleveland, OH, June 5-8, 2016.

North Central Branch, Entomological Society of America, PhD Student Poster Competition. 2016. "Uncovering the Genetic Mechanisms of Imidacloprid

Resistance in *Leptinotarsa decemlineata* in the Central Sands Region of Wisconsin.", Clements, J.R. and **Groves, R.L.** University of Wisconsin, NCB ESA Annual Meeting, Cleveland, OH, June 5-8, 2016.

North Central Branch, Entomological Society of America, Undergraduate and MS Student Poster Competition. 2016. "Wild Bee Abundance and Diversity on Organic

Vegetable Farms in Response to Landscape Factors." Prince, K.J. and **Groves, R.L.** University of Wisconsin, NCB ESA Annual Meeting, Cleveland, OH, June 5-8, 2016.

Entomological Society of America, Annual Meeting. 2016. **Groves, R.L.**, Frost, K.E. and Charkowski, A.O. 2016. Grower-driven data reveals first principles in the management of Potato virus Y incidence in seed potato production. Section Symposium Abstract of the XXV International Congress of Entomology, September 25-30, Orlando Convention Center, Orlando, FL ([doi:10.1603/ICE.2016.93731](https://doi.org/10.1603/ICE.2016.93731)).

Groves, R.L. and Chapman, S.A. 2016. "Optimizing Pest Thresholds for Insect Control". 2016 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 2-4, Steven's Point, WI.

Clements, J.R. and **Groves, R.L.** 2016. "Characterizing Colorado Potato Beetle gene expression following insecticide exposure throughout a growing season". 2016 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 2-4, Steven's Point, WI.

Groves, R.L. 2016. "Genetic Pest Control Options". 2016 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 2-4, Steven's Point, WI.

Prince, K.J. and **Groves, R.L.** 2016. "Snap Bean Insect Pest Management". 2016 Wisconsin Crop Management Conference Abstracts, January, 14, Alliant Energy Center, Madison, WI.

2015

Bloomington, C., **Groves, R.L.** and Smith, D. 2015. Seasonal occurrence of thrips species prevalent in soybean and the economic impact of Soybean vein necrosis virus in Wisconsin. In Proceedings of the 2015 American Phytopathological Society of America, Annual Meeting Abstracts, Phytopathology 105(11):S4.16.

Dundore-Arias, J.P., **Groves, R.L.** and Barak, J.D. 2015. Presence of Salmonella enterica in the alimentary canal of *Macrosteles quadrilineatus*, and role of prgH in persistence of the ingested bacteria. In Proceedings of the 2015 American Phytopathological Society of America, Annual Meeting Abstracts, Phytopathology 105(11):S4.39.

Genger, R.K., Rouse, D.I., **Groves, R.L.** and Charkowski, A.O. 2015. Improving the health and productivity of organic potato crops through participatory research. In Proceedings of the 2015 American Phytopathological Society of America, Annual Meeting Abstracts, Phytopathology 105(11):S4.68.

Groves, R.L. and Chapman, S.A. 2015. Insecticide resistance management fundamentals. In Proceedings of the 2015 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 3-5, Steven's Point, WI, 22:2pps.

Groves, R.L. Charkowski, A.O. and Bethke, P. 2015. Influence of viral stresses on potato storage quality. In Proceedings of the 2015 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 3-5, Steven's Point, WI, 22:1pp.

Groves, R.L. and Huseth, A.S. 2015. Landscape management of potato pests and pathogens. In Proceedings of the 2015 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 3-5, Steven's Point, WI, 22:2pps.

Groves, R.L. and Prince, K.J. 2015. Neonicotinoid detection levels in processing vegetables. In Proceedings of the 2015 Midwest Food Processors Association Annual Meeting, Processing Crops Conference Abstracts, December 2-3, KI Convention Center, Green Bay, WI. 111: (<http://www.mwfpaconvention.org/#!blank/p7zfa>).

Groves, R.L. and Huseth, A.S. 2015. Co-application of the diamide insecticides in snap beans. In Proceedings of the 2015 Wisconsin Crop Management Conference Abstracts, January, 13-15, Alliant Energy Center, Madison, WI.

Frost, K.E., Gevens, A.J. and **Groves, R.L.** 2015. Web-based pest and disease forecasting tool for enhanced processing vegetable crop management. In Proceedings of the 2015 Wisconsin Crop Management Conference Abstracts, January, 13-15, Alliant Energy Center, Madison, WI.

Groves, R.L., Frost, K.E. and Huseth, A.S. 2015. Modeling Potato virus Y incidence in seed potato production using grower-driven data and landscape analyses. In Proceedings of the 2015 AFRI NIFA Sponsored Workshop: Enhancing Risk Index-Driven Decision Tools for Managing Insect Transmitted Plant Pathogens, Conference Abstracts, May 14-16, Asilomar Conference Grounds, Pacific Grove, CA. (<http://ucanr.edu/sites/tospo/>).

Groves, R.L., Bloomingdale, C. and Smith, D. 2015. Seasonal Occurrence of Thrips Species Prevalent in Soybean and the Economic Impact of Soybean Vein Necrosis Virus in Wisconsin. In Proceedings of the 2015 Xth International Symposium on Thysanoptera and Tospoviruses, May 16-20, Asilomar Conference Grounds, Pacific Grove, CA. (<http://ucanr.edu/sites/ISTT10/files/199026.pdf>).

2014

ESA Program Symposium, Agricultural Intensification and Insect Communities: Production Trade-Off Challenges with 9 Billion on the Horizon, "Insecticide resistance in a specialist herbivore shows a hidden cost of agricultural intensification", Huseth, A.S., Petersen, J.D., Poveda, K., Szendrei, Z., Nault, B.A., Kennedy, G.G. and **Groves, R.L.** University of Wisconsin, ESA Annual Meeting, Portland, OR, November 16, 2014.

ESA Section Symposium, Effects of Cropping System Landscapes on the Ecology and Management of Insect Vectors and Transmitted Pathogens, "Influence of regional landscapes on Potato virus Y incidence in seed potato", **Groves, R.L.**, E.J. Duerr, A.O. Charkowski, A.B. Crockford, and A.S. Huseth. University of Wisconsin, ESA Annual Meeting, Portland, OR, November 18, 2014.

ESA Graduate Student TMP Competition, "Molecular mechanisms of imidacloprid resistance in Colorado potato beetles (*Leptinotarsa decemlineata*) in the Central Sands region of Wisconsin", J. Clements and **Groves, R.L.** University of Wisconsin, ESA Annual Meeting, Portland, OR, November 17, 2014.

ESA Graduate Student TMP Competition, "Spatial variation in thiamethoxam detections in groundwater resources in Wisconsin's Central Sands vegetable production region", B. Bradford and **Groves, R.L.** University of Wisconsin, ESA Annual Meeting, Portland, OR, November 17, 2014.

ESA PI-E Section, Ten minute paper, "Monitoring thrips populations and soybean vein necrosis virus (SVNV) in Wisconsin soybean", C. Bloomingdale, **Groves, R.L.**, and D. Smith. University of Wisconsin, ESA Annual Meeting, Portland, OR, November 17, 2014.

Oral Technical Session, Ecology and Epidemiology – "Phytophagous hemipterans as vectors of *Salmonella enterica*." J.P. Soto-Arias, **Groves, R.L.** and J. Barak. APS National Meeting, 9-13 August 2014, Minneapolis, MN.

Special Session - What's App? Using Apps and Technology in Integrated Plant Disease Management Programming, "Integrating grower-driven and publically held data for improved plant protection." **Groves, R.L.**, K.E. Frost and A.S. Huseth. APS National Meeting, 9-13 August 2014, Minneapolis, MN.

Poster Session - Ecology and Epidemiology - Cropping Systems / Sustainability, "Participatory evaluation of potato varieties on organic farms: opportunities for education and research." R.K. Genger, D.I. Rouse, **Groves, R.L.**, S.H. Jansky, and A.O. Charkowski. APS National Meeting, 9-13 August 2014, Minneapolis, MN.

Groves, R.L., Frost, K.E. and Huseth, A.S. 2014. Integrating grower-driven and publically held data for improved plant protection. In Proceedings of the 2014 Joint Meeting of the American Phytopathological Society & The Mycological Society of America (APS-CPS 2014), Annual Meeting Abstracts, Phytopathology 104:S3. pp.159.

Genger, R.K., **Groves, R.L.**, Jansky, S., Rouse, D. and Charkowski, A.O. 2014. Participatory evaluation of potato varieties on organic farms: Opportunities for education and research. In Proceedings of the 2014 Joint

Meeting of the American Phytopathological Society & The Mycological Society of America (APS-CPS 2014), Annual Meeting Abstracts, *Phytopathology* 104:S3. pp.169-170.

Soto-Arias, J.P., **Groves, R.L.** and Barak, J.D. 2014. Phytophagous hemipterans as vectors of *Salmonella enterica*. *In* Proceedings of the 2014 Joint Meeting of the American Phytopathological Society & The Mycological Society of America (APS-CPS 2014), Annual Meeting Abstracts, *Phytopathology* 104:S3. pp.188.

German, T.L. and **Groves, R.L.** 2014. New directions in pest management. *In* Proceedings of the 2014 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW-Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 4-6, Steven's Point, WI, 27:3pps.

Huseth, A.S. and **Groves, R.L.** 2014. Environmental fate of soil applied neonicotinoid insecticides in an intensively irrigated agroecosystem. *In* Proceedings of the 2014 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW-Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 4-6, Steven's Point, WI, 27:2pps.

2013

Huseth, A.S. and **Groves, R.L.** 2013. Environmental fate of neonicotinoids: a potato case study. *In* Proceedings of the 2013 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW-Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 26:28a.

Frost, K.E., Gevens, A. and **Groves, R.L.** 2013. Economics of aster yellows management. *In* Proceedings of the 2013 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW-Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 26:40a.

Groves, R.L. and Chapman, S.A. 2013. New insecticide technologies for potato insect pest management. *In* Proceedings of the 2013 University of Wisconsin - Wisconsin Potato and Vegetable Growers, Grower Education Conference, UW-Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 5-7, Steven's Point, WI, 26:44.

Groves, R.L. and K.E. Frost. 2013. ESA Member Symposium, Frontiers of IPM: Honoring the Career of Marshall W. Johnson "Modeling aphid flight dynamics for improved management of non-persistent viruses", University of Wisconsin, ESA Annual Meeting, Austin, TX, November 2013.

J.P. Soto-Arias, **R. L. Groves** and J. Barak. 2013. Special Session – Insect Transmitted Bacterial Diseases: Passing the Gift, "Phytophagous insects, *Salmonella enterica*, and fresh produce: A tritrophic interaction that can make you sick." APS National Meeting, 10-14 August 2013, Austin, TX.

C. Zhang and **R. L. Groves**. 2013. Student Oral Presentation, "Resistance to infection by Potato virus Y among selected varieties for improved seed potato production." APS National Meeting, 10-14 August 2013, Austin, TX.

2012

Huseth, A.S., and **Groves, R.L.** 2012. Environmental fate of neonicotinoids. *In* Proceedings of Wisconsin's Annual Potato Meeting, UW-Madison College of Agriculture and Life Sciences, Research Division and UWEX, Jan. 31- Feb. 2, Steven's Point, WI, 25:135-137.

Huseth, A.S., and **Groves, R.L.** 2012. Colorado potato beetle (*Leptinotarsa decemlineata*) overwintering emergence patterns and the relationship to neonicotinoid resistance. *In* Proceedings of Wisconsin's Annual Potato Meeting, UW-Madison College of Agriculture and Life Sciences, Research Division and UWEX, Jan. 31- Feb. 2, Steven's Point, WI, 25:166.

2011

Charkowski, A., R. Genger, A.C. Fulladolsa, **Groves, R.L.**, N. Hernandez, S. Chapman, A. Crockford, K. Bula, R. Coltman, R. Hafner, and K. Heinzen. 2011. Virus update and new management systems for seed potatoes. *In Proceedings of Wisconsin's Annual Potato Meeting, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 1-3, Steven's Point, WI, 24:11-15.*

Huseth, A.S., and **Groves, R.L.** 2011. Colorado potato beetle insecticide resistance in Wisconsin: characterizing diapause physiology and behavior associated with neonicotinoid resistance. *In Proceedings of Wisconsin's Annual Potato Meeting, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 1-3, Steven's Point, WI, 24:149-151.*

Frost, K.E., R. Van Haren, and **Groves, R.L.** 2011. Historical variation in aster leaf hopper abundance and aster yellows phytoplasma infectivity: assessing periods of elevated risk. *In Proceedings of the 2011 Wisconsin Muck Crops Research Meeting, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 2, Steven's Point, WI, 24:173—177.*

2010

Huseth, A., and **R. Groves.** 2010. Overwintering biology and extended diapause in Colorado potato beetle. *In Proceedings of Wisconsin's Annual Potato Meeting, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 2-4, Steven's Point, WI, 23:89-92.*

Frost, K., and **R. Groves.** 2010. Overwintering non-crop sources of aster yellows phytoplasma. *In Proceedings of the 2010 Wisconsin Muck Crops Research Meeting, UW- Madison College of Agriculture and Life Sciences, Research Division and UWEX, Feb. 3, Steven's Point, WI, 23:165-170.*

Groves, R.L., D. Lowenstein, and B. Halfman. 2010. Vine crop pest management and pollinators. *In Proceedings of the 2010 Wisconsin Crop Management Conference, College of Agriculture and Life Sciences, Research Division. Jan. 12-14, Madison, WI, 49:88-92.*

2009

Zsendrei, S., Frost, K., and **Groves, R.L.** 2009. Aster leafhopper index: What is it and how do you use it? *In Great Lakes Agricultural Exposition, Dec 8-10, 2009. Invited speaker and educator. 59:48-50*

Groves, R.L. Bussan, A.J., Charkowski, A.O., Rehbein, T., and Halfman, B. 2009. Vine crop pest management: new tools and techniques. *In Proceedings of the 2009 Wisconsin Crop Management Conference, College of Agriculture and Life Sciences, Research Division. Jan 13-15, Madison, WI, pp. 99-105.*

Groves, R.L. 2009. Onion thrips control using foliar insecticides in dry bulb onion production. *In Proceedings of the 2009 Wisconsin Potato and Vegetable Growers, Grower Education Conference. Vol. 22, College of Agriculture and Life Sciences, Feb 3-5, Stevens Point, WI, pp. 169-172.*

Groves, R.L. 2009. Mint bud mite management in Wisconsin peppermint production: application timing and new tools. *In Proceedings of the 2009 Wisconsin Potato and Vegetable Growers, Grower Education Conference. Vol. 22, College of Agriculture and Life Sciences, Feb 3-5, Stevens Point, WI, pp. 173-178.*

Chapman, S.A. and **Groves, R.L.** 2009. New insecticide technology for control of potato insect pest management. *In Proceedings of the 2009 Wisconsin Potato and Vegetable Growers, Grower Education Conference. Vol. 22, College of Agriculture and Life Sciences, Feb 3-5, Stevens Point, WI, pp. 81-88.*

Groves, R.L., Charkowski, A.O., Bussan, A.J. and Crockford, A. 2009. Long-term storability of Potato virus Y infected tubers. *In Proceedings of the 2009 Wisconsin Potato and Vegetable Growers, Grower Education Conference. Vol. 22, College of Agriculture and Life Sciences, Feb 3-5, Stevens Point, WI, pp. 31-36.*

Huseth, A. and **Groves, R.L.** 2009. Overwintering habitats of Colorado potato beetle in Wisconsin's Central Sands production area. *In Proceedings of the 2009 Wisconsin Potato and Vegetable Growers, Grower Education Conference. Vol. 22, College of Agriculture and Life Sciences, Feb 3-5, Stevens Point, WI, pp. 31-36.*

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2003

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Newsletters and Trade Journals**2020**

Groves, R.L. 2020. Badger CommonTater magazine, The Badger Beat, "*Predicting the risk for transmission of Potato virus Y*". March Issue.

Groves, R.L. 2020. Badger CommonTater magazine, The Badger Beat, "*Recent and Emerging Insect Arrivals in Wisconsin Vegetables*". July Issue.

Groves, R.L. 2020. Badger CommonTater magazine, The Badger Beat, "*Year-End Review*". December Issue.
Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (3 articles), March – October, 2020.

UW-Madison Vegetable Entomology website (<http://labs.russell.wisc.edu/vegento/>). In 2020, a total of 43,776 individual views were reported through Google Analytics, with the peak number of views occurring in May, and the average daily views recorded as 109/day.

Gray, S.M., Charkowski, A.O., Zidack, N. and **Groves, R.L.** 2020. "*10 Questions to Ask Before Purchasing Certified Seed Potatoes*", Spudman magazine, Jan Issue.

2019

Groves, R.L. 2019. Badger CommonTater magazine, The Badger Beat, "*2019 Insect Pest Management Review*". January Issue.

Groves, R.L. 2019. Badger CommonTater magazine, The Badger Beat, "*Abundant pollinator diversity in Wisconsin specialty crops*". March Issue.

Groves, R.L. 2019. Badger CommonTater magazine, The Badger Beat, "*Contaminant risks in Wisconsin groundwater-fed streams*". July Issue.

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (6 articles) - , March – October, 2019.

UW-Madison Vegetable Entomology website (<http://labs.russell.wisc.edu/vegento/>). In 2019, a total of 31,108 individual views were reported through Google Analytics, with the peak number of views occurring in June, and the average daily views recorded as 72/day.

2018

Groves, R.L. 2018. Badger CommonTater magazine, The Badger Beat, "*Insect Pest Management Review*". January Issue.

Groves, R.L. 2018. Badger CommonTater magazine, The Badger Beat, "*Pesticide detections in Wisconsin and the Midwest region of the United States*". March Issue.

Groves, R.L. 2018. Badger CommonTater magazine, The Badger Beat, "*Pesticide interactions influence resistance development*". July Issue.

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (7 articles) - , March – October, 2018.

UW-Madison Vegetable Entomology website (<http://labs.russell.wisc.edu/vegento/>). In 2018, a total of 47,509 individual views were reported through Google Analytics, with the peak number of views occurring in June, and the average daily views recorded as 103/day.

2017

UW-Madison Vegetable Entomology website (<http://labs.russell.wisc.edu/vegento/>). Russ Groves hosts this website which provides primary web presence of the Potato and Vegetable Entomology research and extension program to stakeholders. In 2017, a total of 28,106 individual views were reported through Google Analytics, with the peak number of views occurring in June, and the average daily views recorded as 68/day.

UWEX-Vegetable Production Team Website (<http://vegetables.wisc.edu/>). Team members regularly contribute UWEX Vegetable Crop Updates newsletters to this site, in addition to other Vegetable Pathology, Entomology, Horticulture, Soil Science, and Organic production content. Website is maintained by Eileen Nelson, Outreach Specialist to UWEX Vegetable Production Team.

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (5 articles) - , March – October, 2017.

Groves, R.L. 2017. Badger CommonTater magazine, The Badger Beat, “*Insect Pest Management Review – 2016: And a Look Ahead to 2017*”. January Issue.

Groves, R.L. 2017. Badger CommonTater magazine, The Badger Beat, “*Inducing Plant Immunity – Reducing Potato virus Y Infection*”. March Issue.

Groves, R.L. 2017. Badger CommonTater magazine, The Badger Beat, “*IPM, Insecticide Resistance and Biological Insecticides*”. July Issue.

2016

Groves R.L. et al. 2016, “Chapter 9. “*Hancock Agricultural Research Station—Research, Extension, Instruction and Service.2000-Present*”. Centennial Reference for the Hancock ARS (<http://hancock.ars.wisc.edu/about-us/our-centennial/>).

Groves, R.L. 2016. Badger CommonTater magazine, The Badger Beat, “*Insect Pest Management Review – 2015: And a Look Ahead to 2016*”. January 2016 Issue.

Groves, R.L. 2016. Badger CommonTater magazine, The Badger Beat, “*A Follow-Up on Insect Pest Thresholds in Potato*”. March 2016 Issue.

Groves, R.L. 2016. Badger CommonTater magazine, The Badger Beat, “*Managing Potato virus Y – Research Progress and a Management Checklist*”. July 2016 Issue.

Groves, R.L. 2016. Badger CommonTater magazine, The Badger Beat, “*Insect Pest Management Review - 2016*”. December 2016 Issue.

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (2 articles) - , March – October, 2016.

2015

Huseth, A.S. and **Groves, R.L.** 2015. Badger CommonTater magazine, The Badger Beat, “*Water Quality-Maybe the Next ‘Hot Potato*”. January 2015 Issue.

Dundore-Arias, J.P., Barak, J.D. and **Groves, R.L.** 2015. Badger CommonTater magazine, The Badger Beat, “*A New Twist on Controlling Insects – Limiting Food-borne Pathogens*”. March 2014 Issue.

UWEX Vegetable Team. 2015. Wisconsin Crop Manager, Vegetable Crop Update #31. October 9.

UWEX Vegetable Team. 2015. Wisconsin Crop Manager, Vegetable Crop Update #30. September 5.

UWEX Vegetable Team. 2015. Wisconsin Crop Manager, Vegetable Crop Update #21. July 9.

UWEX Vegetable Team. 2015. Wisconsin Crop Manager, Vegetable Crop Update #20. July 8.

UWEX Vegetable Team. 2015. Wisconsin Crop Manager, Vegetable Crop Update #11. June 1.

UWEX Vegetable Team. 2015. Wisconsin Crop Manager, Vegetable Crop Update #10. May 28.

UWEX Vegetable Team. 2015. Wisconsin Crop Manager, Vegetable Crop Update #1-15. April – October 2015.

2014

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (3 articles) #1 - , March – October, 2014.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates (3 articles) #1 - , March – October, 2014.

T.L. German and **Groves, R.L.** 2014. Badger CommonTater magazine, The Badger Beat, “New Directions in Pest Management”. January 2014 Issue.

Groves, R.L. 2014. Badger CommonTater magazine, The Badger Beat, “Protecting Crops and Pollinators. March 2014 Issue.

A.S. Huseth, S. A. Chapman, B. A. Nault and **Groves, R.L.** 2014. Badger CommonTater magazine, The Badger Beat, “Managing Colorado potato beetle insecticide resistance: new tools and strategies for the next decade. July 2014 Issue.

A.J. Gevens, M.D. Ruark, J. Colquhoun and **Groves, R.L.** 2014. Badger CommonTater magazine, The Badger Beat, “2014 Year End Pest Review. December 2014 Issue.

Wisconsin Crop Manager, Vegetable Crop Updates #1 - 16, March – October 2014.

2013

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (13 articles) #1 - , March – October, 2013.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates (13 articles) #1 - , March – October, 2013.

Wisconsin Crop Manager, Vegetable Crop Updates #1 - , March – October 2013.

2012

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (10 articles) #1 - , March 23 – October 10 2012.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates (10 articles) #1 - , March 23 – October 10, 2012 2012.

Wisconsin Crop Manager, Vegetable Crop Updates #1 - , March 23 – October 10 2012.

2011

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates (14 articles) #5-17, #21, May 12 – September 3, 2011.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates (14 articles) #5-17, #21, May 12 – September 3, 2011.

Wisconsin Crop Manager, Vegetable Crop Updates #5-17, #21, May 12 – September 3, 2011.

Groves, R.L. 2011. *We don't need no stinking bugs*. The Badger Common 'Tater 63(7):10-11.

Groves, R.L. 2011. *Current status of endosulfan phase-out, implications for Wisconsin producers*. Fresh: a Wisconsin Perspective 4(1):15.

2010

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates 3-5, 10, 12-14, May 28 – August 12, 2010.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates 3-5, 10, 12-14, May 28 – August 12, 2010.

Wisconsin Crop Manager, Vegetable Crop Updates, 3-5, 10, 12-14, May 28 – August 12, 2010.

Groves, R.L. 2010. Insecticide pre-mixes and tank mixes. The Badger CommonTater 62(3):10-11.

Groves, R.L. and K.E. Frost. 2010. Working toward an improved understanding of the aster yellows phytoplasma. *The Badger CommonTater* 63(7):11-13.

Szendrei, Z., K. Frost, and **R. Groves**. 2010. Aster leafhopper index; what it is and how do you use it? *Carrot Country* 18(2):16-18.

2009

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates 1 and 3-8, June 11 – September 10, 2009.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates 1 and 3-8, June 11 – September 10, 2009.

Wisconsin Crop Manager, Vegetable Crop Updates, 1 and 3-8, June 11 – September 10, 2009.

Groves, R.L. 2009. Potato virus Y foliar management and foliar protectants. *The Badger CommonTater* 61 (6):10-12.

Groves, R.L. 2009. Colorado potato beetle overwintering and extended diapause *The Badger CommonTater* 61 (11):10-12.

2008

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates 1-14, June – September, 2008.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates 1-14, June – September, 2008.

Wisconsin Crop Manager, Vegetable Crop Updates, 1-14, June – September, 2008.

Groves, R.L. 2008. *Candidatus* Liberibacter spp: a new or emerging pathogen causing Zebra chip in potato?? *The Badger CommonTater* 60 (10):10-12.

Colquhoun, J., Bussan, A.J., and **Groves, R.L.** 2008. The Badger Beat, Going organic? Consider these questions first. *The Badger CommonTater* 60 (7):10-11.

Groves, R.L. 2008. Wireworms: an emerging threat or a re-emerging pest. *The Badger CommonTater* 60 (5):10-12.

2007

Commercial Vegetable Crop Newsletter, Vegetable Crop Updates 1-11, June – September, 2007.

Fresh Market Fruit and Vegetable Newsletter, Vegetable Crop Updates 1-11, June – September, 2007.

Wisconsin Crop Manager, Vegetable Crop Updates, 1-11, June – September, 2007.

Groves, R.L. 2007. The Badger Beat, Integrated pest management part II: Resistance management of the Colorado Potato Beetle. *The Badger CommonTater* 59(7):10-13.

Groves, R.L. 2007. The Badger Common-Tater Interview. *The Badger CommonTater* 59(5):6-9.

Groves, R.L. 2007. The Badger Beat, Pest management planning for the future: an emphasis on resistance management. *The Badger CommonTater* 59 (3):10-12.

Other Media

Vegetable Crop Entomology Homepage– Extension and Research. The UW-Madison, Vegetable Crop Entomology homepage (<https://vegento.russell.wisc.edu/>), was updated with new content including quick links under field trial evaluations, pest fact sheets, and Division of Extension publications. Annual estimates for single visits to web-pages exceed 34K unique page views with over 23K unique users (<https://vegento.russell.wisc.edu/wp-admin/>). Our web-based materials provide update, and timely information describing the ecology and management of insects of commercial and fresh market vegetable crops. Specifically, the focus of our research and extension program is educational delivery of research-based

information to stakeholders and the public, with a goal of improving the sustainability of commercial and fresh market vegetable production in Wisconsin through research-based practices.

Vegetable Disease & Insect Forecasting Network. The UW-Madison, Vegetable Disease & Insect Forecasting Network homepage (<https://agweather.cals.wisc.edu/vdifn/maps>), contains daily and hourly pest and disease phenology and prediction capabilities with statewide coverage. Web-based materials provide location specific estimates of accumulated degree days for 24 insect pest species, and disease severity value (estimates) for the prediction of foliar diseases in Solanaceous crops. Users are able to obtain hourly/daily estimates on a site-specific basis as data are available on a 2 km grid.

UW-Vegetable Production Team Website. (<http://vegetables.wisc.edu/>). Team members regularly contribute UWEX Vegetable Crop Updates newsletters to this site, in addition to other Vegetable Pathology, Entomology, Horticulture, Soil Science, and Organic production content. Website is maintained by Eileen Nelson, Outreach Specialist to UWEX Vegetable Production Team.

Groves, R.L. 2013. Plant Management Network Educational Module, “Rotating New Chemistries in Potato Pest Management”. July 2013, Invited Speaker, <http://www.plantmanagementnetwork.org/edcenter/seminars/potato/PestManagement/>.

Groves, R.L. 2012. “Insecticide Resistance Management Colorado Potato Beetle: a Case Study on Potatoes”, Plant Management Network International, February 2012. (<http://www.plantmanagementnetwork.org/edcenter/seminars/potato/InsecticideResistanceManagement/>).

Groves, R.L. 2011 “Delivering Insecticides Via Drip Irrigation In Tomatoes And Potatoes”. American Vegetable Grower Magazine, Insect Control Channel, (<http://growingproduce.com/gptv/index.php?vid=311>), Invited Session Speaker

Groves, R.L. and M.F. Holm. 2011. Pest Management Solutions for Resistant CPB. R.D. Offutt Corporation and DuPont Crop Protection, Plankinton, SD. October, 2011. (Webinar)

Groves, R.L., C. Sheppard, C. Baer, and M.F. Holm. 2011. Maintaining the Effectiveness of the Neonicotinoid Insecticides. Frito Lay North America and DuPont Crop Protection, Rhinelander, WI. December 2011. (Webinar)

Groves, R.L. 2010. “Advanced Insect Pest Management”, Wisconsin Potato and Vegetable Growers Association, Project: Into The Outdoor Series, Amy Wallace Producer, Discover Mediaworks, Inc., filmed 14 September 2010. “Tater Tales” episode aired January 15-16, 2011.

Groves, R.L. 2009. “Treatment Window Series: Building a Treatment Window for Potatoes; Colorado potato beetle and potato leafhopper”. American Vegetable Grower Magazine, Insect Control Channel, (<http://growingproduce.com/gptv/index.php?vid=85>), Invited Session Speaker.

Invited Presentations

2020

Groves, R.L. 2020. *Widespread detections of neonicotinoid insecticides in Central Wisconsin groundwater.* 5th Annual Symposium for Research Administrators, September 24, Office of the Vice Chancellor for Research and Graduate Education, University of Wisconsin.

Groves, R.L. 2020. New and Emerging Diseases in Seed Certification - Emphasizing Management of Potato virus Y. Clean Seed Symposium. April 30, Petro Canada Webinar.

Groves, R.L. 2020. Managing Potato virus Y. Annual seed production conference. April 28, Frito Lay North America, Plano, TX.

Groves, R.L. 2020. *Best management practices for key pests of potato.* R.D. Offutt Potato Company, Spring Agronomy Meeting, February 15-17, Park Rapids, MN. Invited Speaker.

Groves, R.L. 2020. CSS Farms Agronomy Review - Seed, Winter Agronomy Meeting, December 10, Virtual presentation. Invited Speaker.

Groves, R.L. 2020. Controlling potato insects. National Potato Council / US EPA, 2020 Virtual Potato Agency Tour, July 22, <https://youtu.be/tpxaiBPW7U0>

Groves, R.L. 2020. In-furrow insecticides. National Potato Council / US EPA, 2020 Virtual Potato Agency Tour, July 22, <https://youtu.be/7DEWtG0b-ds>

Groves, R.L. 2020. Acreage estimates using NASS Quick Stats and the USDA Cropland Data Layer. United of Wisconsin, February 20, Plover, WI. Invited Speaker (remote presentation).

2019

Groves, R.L., Clements, J.R., Garcia, M., and Hogenhout, S. '*Phylogenetic variation of Aster Yellows phytoplasma: implications for multi-layered modeling efforts*'. Departmental Seminar Series, North Carolina State University, May 2019.

Groves, R.L., Clements, J.R., Garcia-Kerboul, M., and Hogenhout, S.A. '*Seasonal and spatial patterns of Aster Yellows phytoplasma infectivity and pathogen diversity*'. Satellite meeting of the IS-MPMI, Glasgow, UK. Dynamics and Mechanism of Insect-Transmitted Pathogens (<https://www.ismpmi.org/Congress/2019/program/Pages/Satellite-Meetings.aspx>), July, 2019.

Groves, R.L., '*Funding challenges and impediments in the management of the Pierce's Disease pathosystem – a California perspective*'. BRIGIT consortium to mitigate *Xylella fastidiosa* outbreaks in the UK (<https://www.jic.ac.uk/brigit/>), July, 2019.

Hunsaker, D., **Groves, R.L.**, and Havey, M.J. '*Variation for epicuticular waxes across diverse onion germplasm*'. Joint Meeting of NOA, NARC & IARS, Madison, WI. IYSV and thrips tolerance (<https://alliumnet.com/projects/iysv-thrips-tolerance>), July, 2019.

Munaiz, E., Damon, S., **Groves, R.L.**, and Havey, M.J. '*Leaf waxes and thrips resistance*'. Joint Meeting of NOA, NARC & IARS, Madison, WI. IYSV and thrips tolerance (<https://alliumnet.com/projects/iysv-thrips-tolerance>), July, 2019.

Groves, R.L. WERA-89. Virus Diseases of Potato. '*Risk predictions for the timing of PVY transmission*'. Denver, CO, March, 2019.

Groves, R.L. 2019. Potatoes USA Annual Meeting. Potato Research Strategic Planning Meeting, Denver, CO, August, 2019.

Groves, R.L. 2019. *Best management practices for key pests of potato*. R.D. Offutt Potato Company, Spring Agronomy Meeting, February 18-19, Park Rapids, MN. Invited Speaker.

Groves, R.L. 2019. *Potato pest management in the eastern US*. Walther Farms Potato Company, Winter Agronomy Meeting, January 24-25, Michigan City, MI. Invited Speaker.

2018

Groves, R.L., Clements, J.R., Garcia, M., Crubaugh, L., Duerr, E.J., Zwolinska, A., Immink, R., Maree, S. and Hogenhout, S. 2018. *Seasonal and spatial patterns of Aster Yellows phytoplasma infectivity and pathogen diversity in Wisconsin carrots*. International Carrot Conference, Monona Terrace and Convention Center, Madison, WI.

Groves, R.L. 2018. *Geographic variation in resistance among populations of Leptinotarsa decemlineata*. IRAC 2018 Annual Meeting, Dallas, TX.

Groves, R.L. 2018. *Research planning in 2018 and beyond*. Potato Research Roundtable, Potatoes USA Annual Meeting, Denver, CO.

Clements, J. R., **Groves, R.L.**, Garcia-Kerboul, M., Hogenhout, S.A., Maree, A., Immink, R.G.H., and Zwolinska, A. 2018. HFSP Annual Meeting, 'Phylogenetic variation of aster yellows phytoplasma among geographically distinct regions of the United States: implications for multi-layered modeling efforts'. July 2, Toronto, CA. Invited Speaker.

Groves, R.L. 2018. WERA-89. Virus Diseases of Potato. "Disease management recommendations – nonpersistent viruses". March 7, Tucson, AZ. Invited Speaker.

Groves, R.L. 2018. *Best management practices for key pests of potato*. R.D. Offutt Potato Company Spring Agronomy Meeting, February 16, Park Rapids, MN. Invited Speaker.

Groves, R.L. 2018. *Potato pest management in the eastern US*. Walther Farms Potato Company, Winter Agronomy Meeting, January 23, Michigan City, MI. Invited Speaker.

2017

Groves, R.L. 2017. Best management practices for key pests of potato. R.D. Offutt Potato Company Spring Agronomy Meeting, February 27, Park Rapids, MN. Invited Speaker.

Groves, R.L. 2017. Potato pest management in the eastern US. Walther Farms Potato Company, Winter Agronomy Meeting, January 22, Michigan City, MI. Invited Speaker.

Groves, R.L. Clements, J., Garcia, M. and Frost, K. 2017. BBSRC UK-US Joint Meeting, 'Vector-borne diseases in the UK & US: common threats and shared solutions'. October 18, Davis, CA. Invited Speaker.

Groves, R.L. 2017. WERA-89. Virus Diseases of Potato. "Relationship of aphid abundance and diversity to local landscapes". March 8, San Diego, CA. Invited Speaker.

2016

Groves, R.L. 2016. First principals of managing Potato virus Y. In Proceedings of the 2016 Wisconsin Certified Seed Potato Program, Annual Meeting Abstracts, January 28, 2016, Antigo, WI (<http://www.potatoseed.org/>). Invited Speaker.

Groves, R.L. 2016. University of Arkansas. "Grower Driven Data Reveals Practical Solutions in IPM". October 28, Fayetteville, AR. Distinguished Alumnus Speaker.

Groves, R.L. 2016. Potato Partners Program, Syngenta. "Advances in Colorado Potato Beetle and Potato Virus Y Management". November 16, La Jolla, CA. Invited Speaker.

2015

Groves, R.L. 2015. Potato Exposition. Seed Sector Breakout Session. "PVY and Other Emerging Viruses: Best Management Practices to Minimize Virus Levels in Seed Crops". January 7, Orlando, FL. Invited Speaker.

Groves, R.L., Frost, K.E., Charkowski, A.O., Duerr, E.J., Crockford, A.B. and Huseh, A.S. 2015. Wisconsin Seed Potato Industry Association. "Influence of regional landscapes on Potato virus Y incidence in seed potato". January 28, Antigo, WI. Invited Speaker.

Groves, R.L. 2015. Michigan Potato Industry Commission. "Controlling Potato virus Y through Aphid Management". February 10, Bellaire, MI. Invited Speaker.

Groves, R.L. 2015. Michael Fields Institute, “Vegetable insect pest management”. February 19, East Troy, WI. Invited Speaker.

Groves, R.L., Frost, K.E. and Huseh, A.S. 2015. “Modeling Potato virus Y incidence in seed potato production using grower-driven data and landscape analyses”. 2015 AFRI NIFA Sponsored Workshop: Enhancing Risk Index-Driven Decision Tools for Managing Insect Transmitted Plant Pathogens, May 14-16, Asilomar Conference Grounds, Pacific Grove, CA.

Groves, R.L., Bloomingdale, C. and Smith, D. 2015. “Seasonal Occurrence of Thrips Species Prevalent in Soybean and the Economic Impact of Soybean Vein Necrosis Virus in Wisconsin”. Xth International Symposium on Thysanoptera and Tospoviruses, May 16-20, Asilomar Conference Grounds, Pacific Grove, CA.

Groves, R.L., Frost, K.E., Charkowski, A.O., Duerr, E.J., Crockford, A.B. and Huseh, A.S. 2015. University of Minnesota, Department of Entomology Seminar Series. “Producer-Driven and Publically Held Data – Solutions for Management of Potato virus Y”. September 29, Saint Paul, WI. Invited Speaker.

Groves, R.L., Frost, K.E., Charkowski, A.O., Duerr, E.J., Crockford, A.B. and Huseh, A.S. 2015. Molecular and Environmental Toxicology Center “Producer-Driven and Publically Held Data Can Reveal IPM Solutions in Agriculture”. October 15, Madison, WI. Invited Speaker.

Groves, R.L. 2015. Wednesday Night at the Lab, “Insect Pest Management in Wisconsin’s Specialty Crops – Environmental Impacts”. October 28, Madison, WI. Invited Speaker.

2014

Groves, R.L., K. E. Frost, E.J. Duerr, D. Voegtlin, and S.M. Gray. 2014. Potato Exposition. Predicting Aphid Vector Flights: Implications for Timely Management of Potato virus Y, January 7, San Antonio, TX. Invited Speaker.

Groves, R.L. 2014. Frito Lay North America, Seed Seminar, “Aphid Modeling: and Management of Potato virus Y”. February 18, FLNA Headquarters, Plano, TX. *Invited Speaker.*

Groves, R.L. 2014. Organic Valley Produce Pool Annual Pest Management Seminar, “Organic Insect Pest Management”. April 9, LaFarge, WI. *Invited Speaker.*

Groves, R.L. 2014. Colorado Potato Seed Producers, “Managing Spread of Potato virus Y: A Wisconsin Perspective”. June 9, Colorado Seed Potato Certification, Alamosa, CO. *Invited Speaker.*

Groves, R.L. and K.E. Frost. 2014. Entomology Colloquium Series Speaker, “Using Grower-Driven and Publically Held Data to Resolve IPM Issues in Vector-Borne Diseases of Plants”. October 3, Entomology Department, University of Wisconsin, Madison, WI. *Invited Speaker.*

Groves, R.L. and A.S. Huseh. 2014. Monsanto Corporation, Colloquium Series. “Insect Resistance Management—the Road to Resistance is Paved with Good Intentions”, October 9, Chesterfield Research Center, Chesterfield, MO. Invited Speaker.

Groves, R.L. 2014. Iowa State University, Harold Gunderson Memorial Lecture. “Data can Resolve IPM Problems in Agriculture”, November 3, Ames, IA. *Invited Speaker.*

2013

Groves, R.L. 2013. 36th International Carrot Conference, “Integrated Pest Management and Insect Control in Wisconsin Carrot”. August 15, Monona Conference Center, Madison, WI. *Invited Speaker.*

Groves, R.L. 2013. Great Lakes Fruit and Vegetable Exposition. “Incorporating Reduced-Risk Insecticides into Carrot Pest Management”, December 11, Amway Convention Center, Grand Rapids, MI. *Invited Speaker.*

Groves, R.L. 2013. Great Lakes Fruit and Vegetable Exposition. “Insecticide Rotation Options for the Control of Resistant Colorado Potato Beetles”, December 10, Amway Convention Center, Grand Rapids, MI. *Invited Speaker.*

Groves, R.L. 2013. Manitoba Potato Production Days, “*Understanding the migration and control of the aster leafhopper*”. January 23, Manitoba Convention Center, Brandon, MB. *Invited Speaker*.

Groves, R.L. 2013. Manitoba Potato Production Days, “*Novel strains of Potato virus Y: A new plague for seed and commercial growers*”. January 23, Manitoba Convention Center, Brandon, MB. *Invited Speaker*.

Groves, R.L. 2013. Montana Seed Potato Seminar, “*Integrated pest management in potato: PVY, CPB, and Psyllids*”. February 5, Bozeman Convention Center. Bozeman, MT. *Invited Speaker*.

Groves, R.L. 2013. Wisconsin Natural Resources Conservation Service – Central Wisconsin Water Management Seminar, “*Land use changes in the Central Sands, 2002-2013*”. February 12, Hancock Agricultural Experiment Station. *Invited Speaker*.

Groves, R.L. 2013. Organic Valley Produce Pool Annual Pest Management Seminar, “*Insect Pest Priorities for 2013*”. March 4, LaFarge, WI. *Invited Speaker*.

Groves, R.L. 2013. Plant Management Network Educational Module, “*Rotating New Chemistries in Potato Pest Management*”. July 2013, *Invited Speaker*,
<http://www.plantmanagementnetwork.org/edcenter/seminars/potato/PestManagement/>.

Groves, R.L. 2013. Syngenta Agronomy Associates, Educational Training Program. “*Potato IPM – an IRM update*” Syngenta Midwest Regional Center, March 25, Minneapolis, MN. *Invited Speaker*.

Groves, R.L. 2013. Potato Pest Management Updates. 2013 RD Offutt Agronomy Meeting, March 29, Park Rapids, MN. *Invited Speaker*.

2012

Groves, R.L. 2012. Potato virus Y research project. 2012 Potato Expo, Jan. 5, Orlando, FL. *Invited Speaker*.

Groves, R.L. 2012. Drip irrigation delivery of water-soluble insecticides: increasing our application options. Illinois Specialty Crops, Agritourism and Organic Conference, Jan. 12, Springfield, IL. *Invited Speaker*.

Groves, R.L. 2012. Using novel insecticides: pest spectrum and delivery options. Illinois Specialty Crops, Agritourism and Organic Conference, Jan. 12, Springfield, IL. *Invited Speaker*.

Groves, R.L. 2012. Modeling aphid flights for accurate timing of PVY management. 27th Annual Maine Potato Conference, Jan. 19, Caribou, ME. *Invited Speaker*.

Groves, R.L. 2012. Neonicotinoid resistance and Colorado potato beetle management. 27th Annual Maine Potato Conference, Jan. 19, Caribou, ME. *Invited Speaker*.

Groves, R.L. 2012. Managing and controlling whiteflies, aphids and thrips in high tunnels. Minnesota Statewide High Tunnel Conference, Feb. 9, Brainerd, MN. *Invited Speaker*.

Groves, R.L. 2012. Managing Colorado potato beetle resistance. International Crop Expo, Feb. 16, Grand Forks, ND. *Invited Speaker*.

Groves, R.L. 2012. Managing Colorado potato beetle resistance. 2012 RD Offutt Agronomy Meeting, Feb. 17, Park Rapids, MN. *Invited Speaker*.

Groves, R.L. 2012. Insect pest management in mint. 2012 Midwest Mint Growers Meeting, Feb. 24, Plymouth, IN. *Invited Speaker*.

Groves, R.L. 2012. New in-furrow and fertilizer pre-mix insecticides for use in snap bean. Ozark Food Processors Association 106th Annual Convention & Exposition, Apr. 4, Springdale, AR. *Invited Speaker*.

Groves, R.L. and A.S. Huseth 2012. ESA Member Symposium, IRAC US Symposium Series: No.8, Do Crises Drive Innovation? Insect Resistance Management: Proactive or Reactive?, “*Interaction of insecticide resistance and delayed emergence in the Colorado potato beetle - New challenges for an old pest*”, University of Wisconsin, ESA Annual Meeting, 13-15 November, Knoxville, TN.

Groves, R.L. and K. E. Frost. 2012. Program Symposium, "Modeling aphid vector flights and improved control of Potato virus Y", R. L. Groves and K. E. Frost. APS National Meeting, 4-8 August 2012, Providence, RI.

2011

Groves, R.L. 2011. Potato virus Y: a continued risk for seed potato production and emerging threat to commercial potato storage. PVY Symposium, 2011 Idaho Potato Conference and Agriculture Expo, Jan. 19-20, Pocatello, ID. *Invited Symposium Speaker.*

Groves, R.L. 2011. New tools and technologies for managing potato insect pests: Wisconsin perspective. 2011 Idaho Potato Conference and Agriculture Expo, Jan. 19, Pocatello, ID. *Invited Speaker.*

2010

Groves, R.L., A. Charkowski, A. Crockford, R. Coltman, R. Hafner, and K. Bula. 2010. Controlling PVY levels in seed. 2010 Potato Expo, January 4-6, Orlando, FL. *Invited Speaker.*

Groves, R.L. 2010. Potato virus Y: a continuing risk for seed potato production and emerging threat to commercial potato storage. Entomology Department Seminar, Penn State University, April 26, State College, PA. *Invited Departmental Seminar Speaker.*

Groves, R.L., A. Charkowski, and A. Crockford. 2010. Modeling vector flights to increase effectiveness of foliar protectant programs. 11th International Plant Virus Epidemiology Symposium and 3rd Workshop of the Plant Virus Ecology Network, June 24, Cornell University, Ithaca, NY. *Invited Speaker.*

Groves, R.L. 2010. Novel delivery systems for water soluble insecticides in potato. 94th Annual Meeting of the Potato Association of America, August 16, Oregon State University, Corvallis, OR. *Invited Speaker.*

Groves, R.L., and B. Flood. 2010. Novel seed treatment and in-furrow uses of anthranilic diamides. DuPont Crop Protection Meeting, September 29-30, Wilmington, DE. *Invited Speaker and Educator.*

Groves, R.L. 2010. Storage losses associated with potato virus Y in potato. Entomological Society of America Annual Meeting, Dec. 14, San Diego, CA. *Invited Symposium Speaker.*

2009

Groves, R.L. 2009. Biogeography of aster yellows phytoplasma: epidemiological significance of local versus long distance migrants. Entomological Society of America Annual Meeting, P-IE Section Symposium: Plant Disease Vector Movement and Spatial Dynamics in Greenhouse and Cropping Systems. December 13-16, Indianapolis, IN. *Invited Section Speaker.*

Groves, R.L. Adoption of Biologically-Based, Reduced-Risk Pesticides as important IPM Tools in Vegetable Pest Management. BASF Corporation BioPesticide Symposium, Oral presentation. August 11, 2009. Research Triangle Park, NC. *Invited Seminar Speaker.*

Groves, R.L. Influence of Potato virus Y on storage quality of potato. Wisconsin Potato Storage Research Conference, Oral presentation. August 21, 2009. Hancock, WI. *Invited Seminar Speaker.*

Groves, R.L., K.E. Frost, and Van Haren, R. 2009. Biogeography of aster yellows phytoplasma: epidemiological significance of local versus long distance migrants. Entomological Society of America Annual Meeting, P-IE Section Symposium: Plant Disease Vector Movement and Spatial Dynamics in Greenhouse and Cropping Systems. December 13-16, Indianapolis, IN. *Invited Section Symposium Speaker.*

Krugner, R., Johnson, M.W., Hagler, J., Morse, J.G., and **Groves, R.L.** 2009. Quantification of movement and spatiotemporal distribution of *Homalodisca vitripennis* (Germar) (Hemiptera: Cicadellidae) in a citrus orchard using a protein marking technique. Entomological Society of America Annual Meeting, P-IE Section Symposium: Plant Disease Vector Movement and Spatial Dynamics in Greenhouse and Cropping Systems. December 13-16, Indianapolis, IN. *Invited Section Symposium Co-author.*

Groves, R.L. 2009. Insect pest management in vegetable crops. Center for Integrated Agricultural Systems, School for Beginning Market Gardeners and Growers, January 16-17, 2009. Invited speaker and educator.

Zsendrei, S., Frost, K., and **Groves, R.L.** 2009. Aster leafhopper index: What is it and how do you use it? Great Lakes Agricultural Exposition, December 8-10, 2009. Invited speaker and educator.

2008

Groves, R.L. 2008. Managing Colorado Potato Beetle: Recognizing Neonicotinoid Insensitivity. Syngenta Crop Protection Results Meeting, February 21, 2008, Las Vegas, NV. Invited Session Speaker.

Groves, R.L. 2008. Vegetable Entomology & Extension: Learning the Ropes and Traveling Wisconsin, University of Wisconsin, Department of Entomology, Seminar Speaker, October 3, 2008, Madison, WI. Invited Seminar Speaker.

Groves, R.L. 2008. Potato Virus Y; a continuing risk to seed potato production and emerging threat to commercial potato storage. University of Wisconsin, Department of Plant Pathology, Seminar Speaker, October 21, 2008, Madison, WI. Invited Seminar Speaker.

Groves, R.L. and E.L. Civerolo. 2008. Current Progress and Future Directions; Status of Zebra Chip in the Mid-South. Frito Lay North America, Zebra Chip Research and Planning Meeting, December 4, 2008, Dallas, TX. Invited Seminar Speaker.

Johnson, M.W. and **Groves, R.L.** 2008. Cool weather impacts on glassy-winged-sharpshooter: a ten year perspective. 2008 Pierce's Disease Research Symposium, December 15-17, San Diego, CA. Invited Session Speaker.

2007

Groves, R.L. 2007. The importance of non-crop weed species in the establishment and persistence of Tomato spotted wilt Tospovirus. Empire State Fruit and Vegetable Exposition, February 15, 2007, Syracuse, NY. Invited Symposium Speaker

Groves, R.L., E.L. Civerolo, Chen, J., Cabrera LaRosa, J.C., and Lin, H. 2007 Epidemiology of almond leaf scorch: factors affecting pathogen distribution and movement. 125th Annual Entomology and Plant Pathology Seminar Series Speaker, February 13, 2007, Cornell University, Geneva, NY. Invited Seminar Speaker.

Groves, R.L. 2007. Epidemiology of almond leaf scorch: factors affecting pathogen distribution and movement. Michigan State University, Department of Entomology, Symposia Speaker, February 19, 2007. East Lansing, MI. Invited Seminar Speaker.

Groves, R.L., Son, Y., Lynn-Patterson, K., Daane, K., and Johnson, M.W. Spatial population dynamics of glassy-winged sharpshooter, implications for future management. North Carolina State University, Department of Entomology, Symposia Speaker, March 26, 2007. Raleigh, NC. Invited Seminar Speaker.

Groves, R.L. 2007. Introduction and overview of emerging, vector-transmitted diseases. North Carolina Plant Pathology Society, Annual Meeting, March 27, 2007, North Carolina State University, Faculty Club, Raleigh, NC. Invited Seminar Speaker.

Groves, R.L. 2007. Host plant use patterns, dispersal, and detection of *Xylella fastidiosa* in *Homalodisca vitripennis*, implications for the future management of glassy-winged sharpshooter. North Carolina Plant Pathology Society, Annual Meeting, March 27, 2007, North Carolina State University, Faculty Club, Raleigh, NC. Invited Keynote Speaker.

2006

Groves, R.L. 2006. Re-emergence of almond leaf scorch disease in California: identification of inoculum sources and insect vectors. Entomological Society of America, Pacific Branch Meeting, Mar 5-8, 2006, Wailea Maui, HI. Invited Symposium Speaker

Sisterson, M. and **Groves, R.L.** 2006. Assessing the “when and where” of glassy winged sharpshooter vectored Pierce’s disease. VIIth European Congress of Entomology, September 17-22, 2006, Izmir, Turkey. Invited Symposium Speaker.

Groves, R.L., E.L. Civerolo, and Lin, H. 2006. Detection and Characterization of Xylella fastidiosa in Potato; Relationship to the Occurrence of the Zebra Chip Defect. Frito-Lay North America, Research Results Conference on Zebra Chip, November 15, 2006, Dallas, TX. Invited Speaker.

2005

Groves, R.L., and Chen, J. 2005. Spatio-temporal Analysis of ALS: Implications for Secondary Spread of ALS. Geospatial Technologies in Agriculture, Bakersfield, CA. Invited symposium speaker.

Groves, R.L. 2005. Probable Vectors of Almond leaf Scorch Disease, Xf Detection in Sharpshooter Insects. Copesan Annual Meeting, Fresno, CA. Invited speaker.

Groves, R.L., and Chen J., 2005, Epidemiology of Pierce’s Disease in the central San Joaquin Valley of California: factors affecting pathogen distribution and movement. Pierce’s Disease Research Symposium, 5-7 December, California Department of Food and Agriculture, San Diego, CA. Invited symposium speaker.

2004

Groves, R.L. 2004. Epidemiology of Almond Leaf Scorch Disease in the Central San Joaquin Valley of California: Factors Affecting Pathogen Distribution and Dispersal. University of California, Davis, CA. Invited departmental seminar speaker.

Groves, R.L. 2004. Spatial and Temporal Patterns of Insect Movement: Implications for Disease Spread. California State University, Fresno, Plant Science Department. Invited departmental lecture.

Groves, R.L. 2004. Almond Leaf Scorch Disease. Pacific Nut Producers, Almond Exposition. Ripon, CA. Invited speaker.

2002

Groves, R.L. 2002. North Carolina Tospoviruses and Maine Potyviruses. University of Georgia, Athens, GA. Invited seminar speaker.

Groves, R.L., Kennedy, G. G., and Walgenbach, J. W. 2002. Epidemiological importance of weeds in the Tomato spotted wilt virus pathosystem and implications for managing the disease. ESA National Meeting. Ft. Lauderdale, FL. Invited symposia speaker.

Gray, S., **Groves, R.L.**, and Perry, K. 2002. Tuber necrosis viruses: emerging threat-manageable problem? National Potato Council Seed Seminar. Portland, ME. Invited symposia speaker.

2001

Groves, R.L. 2001. Non-crop hosts of tomato spotted wilt tospovirus and its principal insect vectors in North Carolina. North Carolina State University, Raleigh, NC. Invited departmental seminar speaker.

Groves, R.L. 2001. The role of weed hosts and thrips vectors in the epidemiology of Tomato spotted wilt tospovirus. Texas A&M University, College Station, TX. Invited seminar speaker.

1998

Groves, R.L. 1998. Lincoln Memorial Seminar. Overwintering biology of Tomato spotted wilt virus and its vector, *Frankliniella fusca*, in winter annual weeds. University of Arkansas, Fayetteville, AR. Invited speaker.

EXTENSION PRESENTATIONS, WORKSHOPS, AND FIELD DAYS

Date	Role	Event and Location	Attendance
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2020			
Jan 16	Commercial and organic vegetable production	<i>Vegetable crop updates. Wisconsin Agribusiness Classic, Madison, WI. Alliant Energy Center.</i>	70
Jan 27-28	Commercial and organic vegetable production	<i>Adaptive management of insects - Wisconsin Fresh Fruit and Vegetable Growers Conference, Wisconsin Dells, WI. Kalahari Conv. Center.</i>	25
Jan 27-28	Commercial and organic vegetable production	<i>Pumpkin virus management - Wisconsin Fresh Fruit and Vegetable Growers Conference, Wisconsin Dells, WI. Kalahari Conv. Center.</i>	25
Jan 29	Commercial seed and production potato	<i>Insect management update. Wisconsin Seed Potato Improvement Association. Antigo, WI.</i>	85
Jan 31	Organic Vegetable Workshop	<i>Controlling Insect Pests in Hoopouses and Brassicas. Southern Wisconsin Organic Vegetable Workshop. Alliant Energy, Madison, WI</i>	145
Feb 4-6	Commercial potato production	<i>Wisconsin potato management updates. UW & WPVGA, Grower Education Conference, Stevens Point, WI. Holiday Inn Conv. Center.</i>	380
Feb 20	Commercial vegetable	<i>Acreage estimates – United of Wisconsin, Comfort Inn, Plover, WI</i>	45
Mar 4	Commercial vegetable production	<i>Defining Insecticide Resistance – and Knocking it Down!. Central Wisconsin, Processing Crops Conference. HARS, Hancock, WI.</i>	65
2019			
Jan 12	Organic, Beginning Mkt Gardeners	Wisconsin School for Beginning Market Gardeners, Madison, WI	27
Jan 17	Commercial and organic vegetable production	Vegetable crop updates. Wisconsin Agribusiness Classic, Madison, WI. Alliant Energy Center.	75
Jan 28-29	Commercial and organic vegetable production	Allium Insect Management - Wisconsin Fresh Fruit and Vegetable Growers Conference, Wisconsin Dells, WI. Kalahari Conv. Center.	24
Jan 31	Commercial seed and production potato	Predicting risk for PVY transmissin. Wisconsin Seed Potato Improvement Association. Antigo, WI.	80
Feb 1-2	Organic Vegetable Workshop	Brassica insect pest management. Southern Wisconsin Organic Vegetable Workshop. Alliant Energy, Madison, WI	130
Feb 6-8	Commercial potato production	Wisconsin potato management updates. UW & WPVGA, Grower Education Conference, Stevens Point, WI. Holiday Inn Conv. Center.	345
Feb 9	Commercial and organic vegetable	Garden Expo - Wisconsin Cooperative Extension, Alliant Energy Center, Madison, WI	3,300
Mar 7	Commercial vegetable production	Emerging insect pests of processing vegetables. Central Wisconsin, Processing Crops Conference. HARS, Hancock, WI.	60
Mar 12-13	WERA-89 Potato Viruses Workgroup	Virus disease management in potato. Denver, CO.	70
Mar 18	Commercial potato production	Integrated pest management in sustainable potato production. Healthy Grown. HARS. Hancock, WI.	25

Mar 28	Commercial vegetable and potato	<i>Sweet corn insect management</i> – WFFVGA Spring Field Day	55
May 29	Commercial vegetable and potato	<i>Potato insect management</i> – Nichino America, Spring Summit, Hancock, WI	12
June 11	Colorado potato growers	<i>Non-persistent virus transmission</i> – Colorado Seed Producers Meeting, Center, CO	85
Jul 18	Commercial potato production	<i>Potato and vegetable research updates. Hancock Field Day.</i> Hancock, WI.	105
Jul 25	Commercial potato production	<i>Potato and vegetable research updates.</i> Antigo Field Day. Antigo, WI.	110
Aug 2	Commercial seed and potato production	<i>Rhineland Field Day</i> – Rhineland, WI	45
Oct 30	Community Gardens Network	<i>Dane County Cooperative Extension.</i> Madison, WI	13
Nov 1	Michigan Potato Growers	<i>Extended diapause in CPB</i> – Mid-Michigan Agronomy, Lansing, MI	12
Dec 3	Processing vegetable producers	<i>Groundwater insecticide detections.</i> MWFP, PCC, Antigo, WI.	115
2018			
Jan 12	Organic, Beginning Mkt Gardeners	<i>Wisconsin School for Beginning Market Gardeners</i> , Madison, WI	33
Jan 9-11	Commercial and organic vegetable production	<i>Vegetable crop updates. Wisconsin Agribusiness Classic</i> , Madison, WI. Alliant Energy Center.	105
Jan 16	Commercial, direct-market and organic vegetable	<i>Empire State Vegetable Exposition</i> – Syracuse, NY	455
Jan 18	Commercial potato and vegetable	<i>Insecticide detections and water quality</i> – WPVGA Water Task Force, Plover, WI	45
Jan 25	Commercial seed and potato production	<i>Manitoba Potato Production Days</i> – Brandon, MB	220
Jan 22-23	Commercial and organic vegetable production	<i>Pollinator protection. Wisconsin Fresh Fruit and Vegetable Growers Conference</i> , Wisconsin Dells, WI. Kalahari Conv. Center.	88
Jan 31	Commercial seed and production potato	<i>Insecticide resistance management.</i> Wisconsin Seed Potato Improvement Association. Antigo, WI.	80
Feb 2-3	Organic Vegetable Workshop	<i>Southern Wisconsin Organic Vegetable Workshop</i>	205
Feb 6-8	Commercial potato production	<i>Wisconsin potato management updates.</i> UW & WPVGA, Grower Education Conference, Stevens Point, WI. Holiday Inn Conv. Center.	345
Feb 9-11	Commercial and organic vegetable	<i>Garden Expo - Wisconsin Cooperative Extension</i> , Alliant Energy Center, Madison, WI	3,300

Feb 13	Commercial seed and potato production	<i>Syngenta Potato IPM meeting</i> – Holiday Inn and Convention Center, Stevens Point, WI	130
Feb 22-23	Commercial mint production	<i>Pollinator protection and new label requirements</i> – Midwest Mint meeting, Wisconsin Dells, WI	115
Mar 7	Commercial vegetable production	<i>Neonicotinoid detections in groundwater.</i> Central Wisconsin, Processing Crops Conference. HARS, Hancock, WI.	75
Mar 6-8	WERA-89 Potato Viruses Workgroup	<i>Nonpersistent virus management.</i> Tucson, AZ.	55
Mar 16	Commercial potato production	<i>Integrated pest management in sustainable potato production.</i> Healthy Grown. HARS. Hancock, WI.	35
June 21	Commercial vegetable and potato	<i>Insect research projections</i> – WPVGA Research Summit	95
Jul 26	Commercial potato production	<i>Potato and vegetable research updates. Hancock Field Day.</i> Hancock, WI.	135
Jul 26	Commercial potato production	<i>Virus Diagnostic Workshop,</i> Antigo, WI	94
Jul 26	Commercial potato production	<i>Potato and vegetable research updates.</i> Antigo Field Day. Antigo, WI.	110
Nov 13-16	Commercial seed and potato production	<i>Managing insecticide resistance in potato production</i> – San Antonio, TX	
Dec 4-6	Commercial potato and seed production	<i>CSS Farms Agronomy.</i> Denver, CO.	87
Dec 5	Vegetable producers	<i>Pollinator protection label language</i> – WI DATCP, Madison, WI	12
Dec 11	Seed potato production	<i>Wisconsin Certified Seed Potato Program Annual Meeting.</i> Antigo, WI.	18
2017			
Jan 7	Organic, Beginning Mkt Gardeners	<i>Wisconsin School for Beginning Market Gardeners, Madison, WI</i>	26
Jan 11	Commercial and organic vegetable production	<i>Vegetable crop updates. Wisconsin Agribusiness Classic, Madison, WI. Alliant Energy Center.</i>	125
Jan 18	UW CALS ARS Winter Mtg	<i>Insect Pest Management in Wisconsin's Specialty Crops – Environmental Impacts.</i> Arlington, WI	80
Jan 20	Dane County Master Gardeners	<i>Insect Pest Management in Vegetable Crops – Advanced Training</i>	45
Jan 23-24	Commercial and organic vegetable production	<i>Vegetable crop updates. Wisconsin Fresh Fruit and Vegetable Growers Conference, Wisconsin Dells, WI. Kalahari Conv. Center.</i>	85
Jan 25	Commercial seed and production potato	<i>Predicting aphid flights and timing of management. Wisconsin Seed Potato Improvement Association. Antigo, WI.</i>	80

Feb 3-4	Organic Vegetable Workshop	<i>Southern Wisconsin Organic Vegetable Workshop</i>	165
Feb 7-9	Commercial potato production	<i>Wisconsin potato management updates. UW & WPVGA, Grower Education Conference, Stevens Point, WI. Holiday Inn Conv. Center.</i>	300
Feb 10-12	Garden Expo	<i>Wisconsin Cooperative Extension, Alliant Energy Center, Madison, WI</i>	2,800
Mar 1	Commercial vegetable production	<i>New management tactics for the control of seed maggots. Central Wisconsin, Processing Crops Conference. HARS, Hancock, WI.</i>	50
Mar 7	Commercial potato production	<i>Integrated pest management in sustainable potato production. Healthy Grown. HARS. Hancock, WI.</i>	24
Mar 8-9	WERA-89 Potato Viruses Workgroup	<i>Relationship of aphid abundance and diversity to local landscapes. San Diego, CA.</i>	65
Mar 25	Waushara County Master Gardeners	<i>Integrated Pest Management in Wisconsin's Specialty Crops Industry – Interactions with Neonicotinoid Insecticides. Wautoma, WI.</i>	70
July 10-12	Commercial, home gardener and organic vegetable production	<i>IPM, insect mgmt, diagnostics and general information, Insect Doctors Booth. Farm Technology Days. Algoma, WI.</i>	3,300
Jul 26	Commercial potato production	<i>Potato and vegetable research updates. Hancock Field Day. Hancock, WI.</i>	135
Jul 27	Commercial potato production	<i>Potato and vegetable research updates. Antigo Field Day. Antigo, WI.</i>	80
Nov 29-20	Commercial potato and vegetable production	<i>Hermiston Farm Field Days. Hermiston, OR.</i>	95
Dec 20-21	Seed potato production	<i>Wisconsin Certified Seed Potato Program Annual Meeting. Madison, WI.</i>	18
2016			
Jan 9	Organic, Beginning Mkt Gardeners	<i>Wisconsin Scholl for Beginning Market Gardeners, Madison, WI</i>	35
Jan 13-15	Potato Exposition	<i>Seasonal Aphid Captures in Potato and Implications for Virus Spread. Las Vegas, NV</i>	950
Jan 14	Commercial and organic vegetable production	<i>Vegetable crop updates. Wisconsin Agribusiness Classic, Madison, WI. Alliant Energy Center.</i>	750
Jan 25-26	Commercial and organic vegetable production	<i>Vegetable crop updates. Wisconsin Fresh Fruit and Vegetable Growers Conference, Wisconsin Dells, WI. Kalahari Conv.Center.</i>	475
Jan 22	Organic vegetable production workshop	<i>Emerging insect threats to organic vegetable farms, Amery, WI</i>	45

Jan 28	Commercial seed and production potato	<i>Managing PVY. Wisconsin Seed Potato Improvement Association. Antigo, WI.</i>	60
Feb 2-4	Commercial potato production	<i>Wisconsin potato management updates. UW & WPVGA, Grower Education Conference, Stevens Point, WI. Holiday Inn Conv.Center.</i>	325
Feb 9	Garden Expo	<i>Wisconsin Cooperative Extension, Alliant Energy Center, Madison, WI</i>	2,200
Feb 22	Organic vegetable pest mgmt. & production	<i>Emerging insect threats to organic vegetable farms. Cashton, WI</i>	17
Feb 26-27	Commercial mint production	<i>IPM in Wisconsin mint. Midwest Mint Meeting. Plymouth, IN.</i>	75
Mar 2	Commercial vegetable production	<i>Snap Bean Insect Pest Management - ECB management – SCRI Research Update. Central Wisconsin, Processing Crops Conference. HARS, Hancock, WI.</i>	50
Mar 8	WPVGA Water Task Force	<i>Conservis Well Data – Update and Steps Ahead. Hancock Agricultural Experiment Station, Hancock, WI.</i>	23
Mar 11	Commercial potato production	<i>Integrated pest management in sustainable potato production. Healthy Grown. HARS. Hancock, WI.</i>	26
July 19-21	Commercial, home gardener and organic vegetable production	<i>IPM, insect mgmt, diagnostics and general information, Plant Doctors Booth. Farm Technology Days. Lake Geneva, WI.</i>	3,500
Jul 21	Commercial potato production	<i>Potato and vegetable research updates. Antigo Field Day. Antigo, WI.</i>	65
Jul 28	Commercial potato production	<i>Potato and vegetable research updates. Hancock Field Day. HARS. Hancock, WI.</i>	140
Jul 31	Commercial, organic and home garden vegetable production	<i>Vegetable updates. UWEX Horticulture Updates. Madison, WI.</i>	35
Aug 10	Commercial and organic vegetable production	<i>Vegetable updates. Twilight Field Tour. UWEX Waushara County. Wautoma, WI.</i>	115
Nov 29-30	Commercial vegetable production	<i>Midwest Food Processors Annual Convention. Processing Crops Conference. Wisconsin Dells, WI.</i>	575
2015			
Jan 6-8	Speaker/Educator	Potato Exposition , Orlando, FL	2,200
Jan 9	Speaker/Educator	Wisconsin Scholl for Beginning Market Gardeners , Madison, WI	40
Jan 13-15	Speaker/Educator	Vegetable crop updates. Wisconsin Crop Management Conference , Madison, WI. Alliant Energy Center.	1,500
Jan 21	Speaker/Educator	MWFPA Processing Vegetable SCRI , Sun Prairie, WI	18

Jan 25-27	Speaker/Educator	Vegetable crop updates. Wisconsin Fresh Fruit and Vegetable Growers Conference , Wisconsin Dells, WI. Kalahari Conv. Center.	550
Jan 28	Speaker/Educator	Managing PVY. Wisconsin Seed Potato Improvement Association . Antigo, WI.	55
Feb 4-6	Speaker/Educator	Wisconsin potato management updates . UW & WPVGA, Grower Education Conference, Stevens Point, WI. Holiday Inn Conv. Center.	200
Feb 9-11	Speaker/Educator	Management of PVY . Michigan Winter Potato Mtg., Bellaire, MI	200
Feb 17	Speaker/Educator	Insect pest management . Farmers Market Workshop. UWEX Waukesha, Walworth, Racine, and Kenosha Counties. Govt. Center. Elkhorn, WI.	40
Feb 17	Speaker/Educator	Neonicotinoid registration status . Lomira Processing Crops Conference, Lomira, WI.	50
Feb 19	Speaker/Educator	IPM in Brassica and Cucurbit crops . Michael Fields Institute, East Troy, WI	23
Feb 26	Speaker/Educator	IPM in Wisconsin mint . Midwest Mint Meeting. Chula Vista Conference Center. Wisconsin Dells, WI.	60
Mar 4	Speaker/Educator	Snap bean and sweet corn IPM . Central Wisconsin, Processing Crops Conference. HARS, Hancock, WI.	65
Mar 5	Speaker/Educator	Insect pest management . UWEX Clark County Thorp Fire House. Thorp, WI.	14
Mar 6	Speaker/Educator	Squash and tomato IPM . UWEX Green Lake County. Dalton, WI.	45
Mar 14	Speaker/Educator	Insecticide registrations and IPM updates in ginseng . Wausau, WI	85
Mar 27	Speaker/Educator	Sweet corn and tomato IPM . WFFVGA Veggie School. HARS. Hancock, WI.	60
May 11	Speaker/Educator	Integrated pest management in sustainable potato production . Healthy Grown. HARS. Hancock, WI.	25
Jul 15	Speaker/Educator	Potato and vegetable research updates . Hancock Field Day. HARS. Hancock, WI.	140
Jul 31	Speaker/Educator	Vegetable updates . UWEX Horticulture Updates. Madison, WI.	35
Aug 12	Speaker/Educator	Vegetable updates . Twilight Field Tour. UWEX Green Lake County. Montello, WI.	60
Aug 14	Speaker/Educator	Managing Wisconsin hop insect pests . UWEX & WI DATCP, Hop Management Meeting. Davali Ridge Farm. Waterloo, WI.	65
Aug 15	Speaker/Educator	Managing Wisconsin hop insect pests . UWEX & WI DATCP, Hop Management Meeting. Albers Hop Farm. Arkensaw, WI.	50
Aug 20	Speaker/Educator	Potato IPM updates . Langlade County Airport Research Station Field Day. Antigo, WI.	65
Aug 25-27	Speaker/Educator	IPM, insect mgmt, diagnostics and general information, Plant Doctors Booth . Farm Technology Days. Cottage Grove, WI.	2000
Sep 8	Speaker/Educator	Organic Field Day . University of Wisconsin. West Madison Agricultural Research Station Field Day. Verona, WI.	75

Oct 28	Speaker/Educator	Specialty crop production and environmental contamination. Department of Biochemistry, Wednesday night at the Lab, Madison, WI	60
Nov 12	Speaker/Educator	Analysis of the Conservis well database. Research sub-committee of the WPVGA, Water Task Force, HARS, Hancock, WI	16
Dec 2-3	Speaker/Educator	Midwest Food Processors Annual Convention. Processing Crops Conference. Green Bay, WI.	100
2014			
Jan 11	Speaker/Educator	Insect pest management-vegetable crops. Wisconsin School for Beginning Market Growers, Madison, WI.	34
Jan 15	Speaker/Educator	Organic vegetable workshop. Dane County Cooperative Extension, Madison, WI.	26
Jan 16	Speaker/Educator	Diamide insecticides in processing vegetables. Wisconsin Crop Management Conference, Madison, WI.	550
Jan 21	Speaker/Educator	Tolerant varieties for pest suppression. Wisconsin Fresh Fruit and Vegetable Conference, Wisconsin Dells, WI.	400
Jan 21	Speaker/Educator	Insect control through drip irrigation. Wisconsin Fresh Fruit and Vegetable Conference, Wisconsin Dells, WI.	400
Feb 6	Speaker/Educator	PVY management. Wisconsin Seed Improvement Association Annual Meeting, Antigo, WI.	80
Feb 12	Speaker/Educator	Resistance management fundamentals for potato insects. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	425
Feb 25	Speaker/Educator	Insect management in carrots and onions. Wisconsin Muck Farmers Association Annual Meeting, Stevens Point, WI.	425
Feb 27	Speaker/Educator	Insect pest management in vegetable crops. Southern Wisconsin Vegetable Workshop, Madison, WI.	45
Mar 7	Speaker/Educator	Vegetable pest updates for 2014. Vegetable Grower's Meeting 2012, Dalton, WI.	18
Mar 22	Speaker/Educator	Pollinator impacts associated with processing vegetables. Central Wisconsin Processing Crops Meeting, Plover, WI.	40
Mar 25	Speaker/Educator	Vegetable insect pests in 2014. Dodge County Master Gardeners Meeting, Juneau, WI.	22
Apr 9	Speaker/Educator	Pest management options in organic produce. Organic Valley produce Pool Meeting, LaFarge, WI	135
Jul 24	Speaker/Educator	Potato and vegetable insect research. AAES Field Day,	115
Aug 1	Speaker/Educator	Potato and vegetable insect research. Antigo Field Day, Antigo, WI	75
Aug 8	Speaker/Educator	Potato and vegetable insect research. HAES Field Day, Hancock, WI.	125
2012			
Jan 14	Speaker/Educator	Insect pest management-vegetable crops. Wisconsin School for Beginning Market Growers, Madison, WI.	22

Jan 16	Speaker/Educator	Reduced risk IPM in veg crops. Wisconsin Fresh Fruit and Vegetable Conference, Wisconsin Dells, WI.	450
Jan 17	Speaker/Educator	Managing whiteflies, aphids and other insect pests in the high tunnel. Wisconsin Fresh Fruit and Vegetable Conference, Wisconsin Dells, WI.	450
Jan 25	Speaker/Educator	PVY management and CPB resistance. Wisconsin Seed Improvement Association Annual Meeting, Antigo, WI.	70
Jan 31	Speaker/Educator	Management of disease and insects with seed applied pesticides. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	375
Jan 31	Speaker/Educator	Management of potato insect pests with in-furrow and seed-applied insecticides. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	375
Feb 1	Speaker/Educator	Insect management in onions: new and special registration updates. Wisconsin Muck Farmers Association Annual Meeting, Stevens Point, WI.	25
Feb 2	Speaker/Educator	Environmental fate of neonicotinoids. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	375
Feb 2	Speaker/Educator	Emerging issues: zebra chip. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	375
Feb 7	Speaker/Educator	Insect pest management in vegetable crops. 2012 Southern Wisconsin Vegetable Workshop, Madison, WI.	20
Feb 10	Speaker/Educator	Transmission of plant pathogens by insects: management of vector-borne diseases of plants. Vegetable Grower's Meeting 2012, Dalton, WI.	15
Mar 7	Speaker/Educator	New in-furrow and fertilizer pre-mix insecticides for use in snap beans. Central Wisconsin Processing Crops Meeting, Plover, WI.	35
2011			
Jan 3	Speaker/Educator	Reduced risk insecticides through drip irrigation delivery systems. Wisconsin Fresh Fruit and Vegetable Conference, Wisconsin Dells, WI.	77
Jan 11-13	Speaker/Educator	Irrigation delivery of water-soluble insecticides. Wisconsin Crop Management Conference, Madison, WI.	59
Feb 1	Speaker/ Educator	Virus update and new management systems for seed potatoes; water quality; and modeling vector flights and timing of foliar protectants. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	40
Feb 2	Speaker/Educator	Insect pest management and Colorado potato beetle: Wisconsin muck grown potato. Wisconsin Muck Crops Research Meeting, Stevens Point, WI.	13

Feb 3	Speaker/Educator	Patterns of resistance in Colorado potato beetle: implications for future management. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	113
Feb 4	Speaker/ Educator	Insect control in drip irrigation and pest management. Fresh Market Vegetable Grower Workshop, Dalton, WI.	48
Feb 8	Speaker/Educator	Advanced IPM – onion insect pest management. 2011 Southern Wisconsin Fresh Produce Workshop, Madison, WI.	44
Feb 14	Speaker/ Educator	Insect control through drip irrigation delivery systems. Fresh Market Vegetable Grower Workshop, Ontario, WI.	65
Feb 14-15	Speaker/Educator	Advanced IPM: onion insect pest management. Grant, Monroe, and Vernon Counties Fresh Produce Workshop.	52
Feb 15	Speaker/ Educator	Insect pest management: brassica vegetable crops. Organic Valley, LaFarge, WI.	79
Feb 16	Speaker/ Educator	Integrated pest management with drip irrigation: 2010 updates. Fresh Market Produce Workshop, Lancaster, WI.	16
Feb 24	Speaker/ Educator	Insect pest management in mint. 2011 Midwest Mint Growers Annual Meeting. Wisconsin Dells, WI.	69
Mar 9	Speaker/ Educator	Revising the aster yellows index. Central Wisconsin Processing Crops Meeting. Plover, WI.	73
Mar 10	Speaker/Educator	Biologically-based, insect pest management in solanaceous crops. Vegetable IPM Conference. Michael Fields Institute. East Troy, WI.	14
Mar 10	Speaker/Educator	Insect pest management in cucurbit vegetable crops. Vegetable IPM Conference. Michael Fields Institute. East Troy, WI.	14
Mar 19	Speaker/Educator	Reduced-risk insecticide options for shade grown ginseng. 2011 Spring Ginseng Growers Meeting. Wausau, WI.	83
Mar 22	Speaker/ Educator	Insect pest management in cabbage. Wisconsin Cabbage Grower's Meeting. Bear Creek, WI.	16
Mar 23	Speaker/ Educator	Insect pest management in vegetable crops. Fresh Market Commercial Vegetable Production. Stanley, WI.	22
Mar 26	Speaker/ Educator	Insect pest management in vegetable crops. Brown County Fresh Market Vegetable Workshop. Green Bay, WI.	17
Jun 1	Attendee/Speaker	Research update: insect pest management in processing vegetables. Midwest Food Processors Association, Haltvick Meeting. Wisconsin Dells, WI.	31
Jul 15	Speaker/Educator	Potato and vegetable insect research. AAES Field Day,	36
Jul 18	Speaker/Educator	Potato and vegetable insect research. Halfman Field Day,	19
Jul 26	Speaker /Educator	Potato and vegetable insect research. HAES Field Day, Hancock, WI.	83
Aug 2	Speaker/Educator	Insect pest management in vegetables. Organic Valley Field Visit, Hillsboro, WI.	16
Aug 4	Speaker/Educator	Potato and vegetable insect research. Antigo Field Day, Antigo, WI.	48

Aug 11	Attendee/Speaker	Research update: insect pest management in processing vegetables. Midwest Food Processors Association, Haltvick Meeting. HAES Snap bean and Sweet Corn Tour, Hancock, WI.	33
Aug 25	Attendee/Educator	Insect control through drip irrigation delivery systems. Groundwater outreach Summer Event, Hancock, WI.	62
Sep 15	Attendee/Speaker	Research update: insect pest management in processing vegetables. Midwest Food processors Association, Haltvick Meeting. WMRS, Madison, WI.	31
Oct 12	Attendee/Participant	Southern Wisconsin Produce Workshop, Madison, WI.	112
Oct 27	Attendee/Participant	Agriculture and Natural Resources Extension (ANRE) Conference, Wisconsin Dells, WI.	43
Nov 8	Speaker/ Educator	Preparing the farm post-harvest for enhanced insect control in 2012. Wisconsin Fresh Market Vegetable Growers Association Fall Field Day, Sheboygan, WI.	15
2010			
Jan 3-5	Speaker/Educator	Pest management in cucurbits: protecting native and domestic pollinators. Wisconsin Fresh Fruit and Vegetable Conference, Wisconsin Dells, WI.	500
Jan 6	Speaker/Educator	Novel seed treatment and in-furrow uses for cucurbit insect pests. Midwest Pickle Growers Association, Green Bay, WI.	45
Jan 12-14	Speaker/Educator	Vine crop pest management and pollinators. Wisconsin Crop Management Conference, Madison, WI.	85
Jan 15	Speaker/Educator	Insect control – new use and delivery of water soluble compounds. Bio-IPM Healthy Grown Field Day, Hancock, WI.	25
Jan 27	Speaker/Educator	Foliar protectants and management of potato virus Y in potato seed. WI Seed Potato Improvement Association, Antigo, WI.	60
Feb 3	Speaker/Educator	Early season onion thrips control and soil insecticides in muck grown crops. UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference, Stevens Point, WI.	30
Feb 19	Speaker/Educator	Biologically-based insect pest management in solanaceous crops. Michael Fields Institute, Vegetable IPM Conference, East Troy, WI.	18
Feb 24	Speaker/Educator	Insect pest management in cucurbit vegetables: new tools and delivery systems. UWEX Fresh Market Produce Workshop, Cashton, WI.	45
Mar 6	Speaker/Educator	Biologically-based insect pest management in vegetable crops. Lake Superior Farming Conference, Superior, WI.	40
Mar 10	Speaker/Educator	Foliar control for viruses. Central Wisconsin Processing Crops Meeting, Plover, WI.	58
Mar 20	Speaker/Educator	Integrated pest management of ginseng. 2010 Spring Ginseng Growers Meeting, Wausau. WI.	60

Mar 24	Speaker/Educator	Important insect pests and new insecticide use patterns. UWEX Fresh Market Vegetable Growers Workshop, Montello, WI.	12
Mar 31	Speaker/Educator	Important insect pests and new insecticide use patterns. UWEX Fresh Market Vegetable Growers Workshop, Stevens Point, WI.	18
Jun 6	Speaker/Educator	Potato and vegetable insect research. Worchota Farms CAC Meeting, Appleton, WI.	35
Jun 22	Speaker/Educator	Insect pest management in vegetable crops. Pierce County Field Walk, Baldwin, WI.	50
Jul 6	Speaker/Educator	Insect pest management in vegetable crops. Tipi Farm Tour, Evansville, WI.	35
Jul 12	Speaker/Educator	Insect pest management in vegetable crops. Columbia County Field Walk, Dalton, WI.	90
Jul 16	Speaker/Educator	Potato and vegetable insect research. Rhinelander Field Day, Rhinelander WI.	75
Jul 22	Speaker/Educator	Industry Field Research Tour. Syngenta Crop Protection, Hancock Agricultural Research Station, Hancock, WI.	8
Jul 26	Speaker/Educator	Industry Field Research Tour. DuPont Crop Protection, Arlington Agricultural Research Station, Arlington, WI.	6
Jul 27	Speaker/Educator	Effects of biotic factors on stored potato quality. Hancock Agricultural Research Station Field Day, Hancock, WI.	38
Jul 28	Speaker/Educator	Best management practices for cucurbit insect pests. West Madison Research Station Organic Field Day, Madison, WI.	50
Aug 11	Attendee/Speaker	Research update: insect pest management in processing vegetables. Midwest Food Processors Association, Haltvick Meeting, Hancock, WI.	60
Aug 12	Speaker/Educator	Potato and vegetable insect research. Antigo Agricultural Research Station Field Day, Antigo, WI.	70
Aug 21	Speaker/Educator	Impacts of potato virus Y on long term potato storage. Potato Storage Research Field Day, Hancock Agricultural Research Station, Hancock, WI.	45
Sep 9	Attendee/Speaker	Research update: insect pest management in processing vegetables. Midwest Food Processors Association, Haltvick Meeting, Hancock, WI.	25
Oct 13	Speaker/Educator	Insect pest management in vegetables. Cashton Fresh Market Produce & Bedding Plant Auction, Cashton, WI.	19
Oct 19-21	Attendee/Participant	Agriculture and Natural Resources Extension (ANRE) Conference, Monona Terrace, Madison, WI.	120
Nov 30	Speaker/Educator	Refining insect pest management in snap beans: new seed treatment technologies. Midwest Food Processors Annual Meeting, Green Bay, WI.	60
Dec 7	Speaker/Educator	Insect pest management in potatoes. Bio-IPM Healthy Grown Meeting, Baraboo, WI.	20
Dec 17	Speaker/Educator	Organic strategies for managing common insect pests on vegetable farms. Madison Area Community Supported Agriculture Coalition	45

		(MACSAC) Winter Grower Gathering, West Madison Research Station, Madison, WI.	
2009			
Jan 4	Speaker/Educator	Wisconsin Fresh Fruit & Vegetable Annual Meeting. Wisconsin Dells, WI.	420
Jan 13-15	Speaker/Educator	Wisconsin Crop Management Conference. Madison, WI.	70
Jan 16	Speaker/Educator	Eco-Potato Collaboration Annual Meeting. Madison, WI.	19
Jan 17	Speaker/Educator	Wisconsin School for Beginning Market Farmers. Madison, WI.	50
Jan 28	Speaker/Educator	Wisconsin Seed Potato Improvement Assoc. Meeting. Antigo, WI.	52
Feb 3-5	Speaker/Educator	UWEX & Wisconsin Potato and Vegetable Grower Association Grower Education Conference. Stevens Point, WI.	330
Feb 4	Speaker/Educator	Wisconsin Muck Farmers Annual Meeting. Stevens Point, WI.	40
Feb 12	Speaker/Educator	Processing Vegetable Growers Clinic. Hancock, WI.	29
Feb 11-13	Attendee/Educator	UWEX Garden Expo	750
Feb 19	Speaker/Educator	Midwest Mint Growers Annual Meeting. Wisconsin Dells, WI.	18
Mar 11	Speaker/Educator	Central Wisconsin Processing Crops Conference. Hancock, WI.	39
Mar 17	Speaker/Educator	Fresh Market Produce & Bedding Plant Workshop. Cashton, WI.	36
Mar 18	Speaker/Educator	Fresh Market Produce & Bedding Plant Workshop. Fennimore, WI.	12
Mar 30	Speaker/Educator	Hancock Diagnostic Workshop. Hancock, WI.	46
Mar 31	Speaker/Educator	Growing for Local Markets. UW Barron, Rice Lake, WI.	38
Apr 1	Speaker/Educator	Fresh Market Vegetable Field Diagnostic Workshop. Fond du Lac, WI.	29
Apr 16	Speaker/Educator	Badgerland Coop Field School. Montello, WI.	34
Jun 17	Speaker/Educator	Hoeskstra's Spring Market Workshop. Randolph, WI.	78
Jun 29	Speaker/Educator	Badgerland Coop Field Twilight Tour. Portage, WI.	27
Jul 10	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Rochester, MN.	27
Jul 14	Speaker/Educator	Badgerland Coop Field Twilight Tour. Pardeeville, WI.	41
Jul 21	Attendee/Educator	Farm Technology Days. Dodge County, WI.	2,500
Jul 22	Host/Speaker	Valent Biosciences Field Day. Hancock, WI	9
Jul 28	Speaker/Educator	Direct Market Field Tour & Workshop. River Falls, WI.	48
Aug 6	Speaker/Educator	Hancock Agricultural Research Station Field Day. Hancock, WI.	120
Aug 7	Speaker/Educator	Antigo Agricultural Research Station Field Day. Antigo, WI.	45
Aug 11-12	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Hancock, WI.	85
Aug 19	Speaker/Educator	Direct Market Field Tour & Workshop. Cashton, WI.	48

Aug 26	Speaker/Educator	Arlington Agricultural Research Station Field Day. Arlington, WI.	12
Sep 9	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Madison, WI.	34
Sep 15-16	Attendee/Co-Liaison	IR-4 Food Use Workshop. Cleveland, OH.	300
Sep 22	Speaker/Educator	UWEX Master Gardener Training. Madison, WI.	18
Nov 2	Speaker/Educator	UWEX Master Gardener Training. Palmyra, WI	13
Nov 5	Speaker/Educator	Wisconsin Fresh Fruit & Vegetable Fall Field Day. Wisconsin Dells, WI.	59
Nov 15	Speaker/Educator	Eco-Apple Collaboration Annual Meeting. Madison, WI.	26
Dec 8	Speaker/Educator	Midwest Food Processors Association Meeting. Rochester, MN	230
Dec 14	Speaker/Educator	Bio-IPM Healthy Grown Field Day. Hancock, WI	27
2008			
Jan 2	Speaker/ Educator	Eco-Potato Collaboration Annual Meeting. Madison, WI.	23
Jan 8	Speaker/ Educator	Fresh Market. Produce and Bedding Plant Workshop. Fennimore, WI.	70
Jan 9	Speaker/ Educator	Fresh Market. Produce and Bedding Plant Workshop. Cashton, WI.	29
Jan 18-19	Speaker/ Educator	Wisconsin Fertilizer, Aglime and Pest Management Conference. Madison, WI.	54
Jan 19	Speaker/ Educator	Wisconsin School for Beginning Market Farmers. Madison, WI.	40
Jan 30	Speaker/ Educator	Wisconsin Seed Potato Improvement Association. Antigo, WI.	58
Feb	Speaker/ Educator	UWEX & Wisconsin Potato and Vegetable Grower Association. Grower Education Conference. Stevens Point, WI.	200
Feb 6-8	Attendee/Educator	UWEX Garden Expo. Madison, WI.	500
Feb 18-20	Speaker/ Educator	North American Farmers Direct Market Conference. Wisconsin Dells, WI.	300
Feb 28	Speaker/ Educator	Midwest Mint Growers Annual Meeting. Wisconsin Dells, WI.	65
Mar 4	Speaker/ Educator	Wisconsin Muck Farmers Annual Meeting. Portage, WI.	28
Mar 6	Speaker/ Educator	Michael Fields Institute. Vegetable IPM Course. East Troy, WI.	13
Mar 11	Speaker/ Educator	Central Wisconsin Processing Crops Conference. Hancock, WI.	28
Mar 11	Speaker/ Educator	Fresh Market. Spring School. Hancock, WI	21
Jun 17	Speaker/ Educator	Organic Valley, Grower Field Tour and Diagnosis. LaFarge, WI	18
Jul 1	Speaker/ Educator	Arlington ARS Field Day. Arlington, WI.	95
Jul 2	Attendee/Speaker	Bio-IPM Healthy Grown Field Day. Hancock, WI.	24
Jul 2	Host/Speaker	United Phosphorus Field Day. Hancock, WI	12
Jul 3	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Arlington, WI.	31
Jul 15-17	Attendee/Educator	Farm Technology Days. Green County, WI.	500
Jul 17-19	Attendee/Educator	Farm Technology Days. Green County, WI.	500

Jul 23	Speaker/ Educator	Hancock ARS Field Day. Hancock, WI.	125
Jul 24	Speaker/ Educator	Antigo ARS Field Day. Antigo, WI.	50
Jul 29	Host/Speaker	Valent Biosciences Field Day. Hancock, WI.	16
Aug 11	Attendee/Co-liaison	IR-4 NCR Liaisons Committee Meeting. Madison, WI	15
Aug 13	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Hancock, WI.	45
Aug 20	Speaker/ Educator	Arlington, WI Troubleshooting Diagnostic Workshop. Arlington, WI.	65
Sep 9	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Madison, WI.	25
Sept 15-17	Attendee/Co-liaison	IR-4 Food Use Workshop. Sacramento, CA	225
Nov 9-12	Speaker/ Educator	Midwest Food Processors Association. Madison, WI	27
2007			
Jan 16	Speaker/ Educator	Eco-Potato Collaboration Annual Meeting. Madison, WI.	25
Jan 24	Speaker/ Educator	Fresh Market. Produce and Bedding Plant Workshop. Cashton, WI.	23
Jan 31	Speaker/ Educator	Wisconsin Seed Potato Improvement Association. Antigo, WI.	45
Feb 7-8	Speaker/ Educator	UWEX & Wisconsin Potato and Vegetable Grower Association. Grower Education Conference. Stevens Point, WI.	250
Feb 9	Moderator/Attendee	North Central Extension Research Activity 205. Potato IPM Working Group. Stevens Point, WI.	25
Feb 10	Attendee/Educator	UWEX Garden Expo. Madison, WI.	500
Feb 27	Speaker/ Educator	Wisconsin Muck Farmers Annual Meeting. Portage, WI.	35
Mar 1	Speaker/ Educator	Midwest Mint Growers Annual Meeting. South Bend, IN.	50
Apr 19	Speaker/ Educator	International Pickle Packers Annual Meeting. Milwaukee, WI.	55
May 8	Speaker/ Educator	Organic Valley, Grower Field Tour and Diagnosis. LaFarge, WI	8
Jun 18	Attendee/Speaker	Bio-IPM Healthy Grown Field Day. Hancock, WI.	18
Jun 21	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Hancock, WI.	35
Jul 18	Speaker/ Educator	Hancock ARS Field Day. Hancock, WI.	75
Jul 19	Speaker/ Educator	Antigo ARS Field Day. Antigo, WI.	45
Jul 26	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Arlington, WI.	26
Aug 21	Speaker/ Educator	Arlington, WI Troubleshooting Diagnostic Workshop. Arlington, WI.	40
Aug 30	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Madison, WI.	29
Nov 27-28	Speaker/ Educator	Midwest Food Processors Association. Milwaukee, WI	44
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Sept 26-28	Attendee/Co-liaison	IR-4 Food Use Workshop. Indianapolis, IN	195
Oct 11	Speaker/ Educator	UWEX Master Gardener Training. Milwaukee, WI	65
Oct 12	Speaker/ Educator	UWEX Master Gardener Training. Fond du Lac, WI	45
Oct 21	Speaker/ Educator	UWEX Master Gardener Training. Madison, WI	180
Nov 13	Attendee/Speaker	Midwest Food Processors Association, Haltvick Meeting. Madison, WI	40
Nov 29-30	Speaker/ Educator	Midwest Food Processors Association. Appleton, WI	35
Dec 8-9	Attendee	National Potato Council Potato Seed Seminar. Chicago, IL	350