

2021 Publications:

Books and Book Chapters

- Crassweller, R., K. Peter, G. Krawczyk, J. Schupp, T. Ford, M. Brittingham, J. Johnson, L. LaBorde, J. Harper, K., Kephart, R. Pifer, K. Kelley, L. He, P. Heinemann, D. Biddinger, M. Lopez-Urbe, R. Marini, T. Baugher, D. Weber, L. Kime, E. Crow, E. Weaver, B. Lehman. 2020. 2020-21 Penn State Tree Fruit Production Guide. The Pennsylvania State University. Produced by Ag Communications & Marketing. AGRS-045. 446 pages. (Awarded Outstanding Book by Extension Division of the American Society for Horticultural Science)
- Long, L.E., **G.A. Lang**, and C. Kaiser. 2020. Sweet cherries. CAB International, Wallingford, U.K., 404 pp. ISBN-13: 9781786398284 (paperback), 9781786398291 (ePDF), 9781786398307 (ePub).

Refereed Journal Articles

- Edgar L. Vinson, III, Elina D. Coneva, Joseph M. Kemble, J. Raymond Kessler, Jr., Esendugue G. Fonsah, Penelope M. Perkins-Veazie, Floyd M. Woods and Jeff L. Sibley. 2020. Reflective Mulch Application and Cover Crop Usage to Stimulate Earlier Banana Flowering. J. Am. Pomological Society. 74(3):169-179. http://www.pubhort.org/aps/74/v74_n3_a5.htm
- G.L. Reighard, W. Bridges, Jr., D. Archbold, A. Atucha, W. Autio, T. Beckman, B. Black, D.J. Chavez, E. Coneva, K. Day, P. Francescato, M. Kushad, R.S. Johnson, T. Lindstrom, J. Lordan, I.S. Minas, D. Ouellette, M. Parker, R. Pokharel, T. Robinson, J. Schupp, M. Warmund, and D. Wolfe. 2020. Nine-Year Rootstock Performance of the NC-1 40 'Redhaven' Peach Trial across 13 States. J. of the American Pomological Society 74(1): 45-56. http://www.pubhort.org/aps/74/v74_n1_a4.htm
- Andrej W. Svyantek, Elina D. Coneva, J. Raymond Kessler, James D. Spiers, Edgar L. Vinson III, M. Andrew Walker, and James A. Pitts. 2020. Assessment of Pierce's Disease Resistant 87.5% *Vitis vinifera* L. Selections in Central Alabama. Catalyst: Discovery into Practice. (4:2). <https://www.asevcatalyst.org/content/early/2020/07/06/catalyst.2020.19008>
- Jacob T.K., J.D. Spiers, J. R. Kessler, Elina D. Coneva, and E.L. Vinson. 2020. Effect of hydrogen cyanamide on flower production of 'AU Golden Sunshine' and 'AU Gulf Coast Gold' kiwifruit. Journal of the American Pomological Society. (Accepted)
- Anthony B, Chaparro J, Sterle D, Prenni J, Minas IS. Early metabolic priming under differing carbon sufficiency conditions influences peach fruit quality development. Plant Physiology Biochemistry 2020, in press.
- Minas IS, Blanco-Cipollone F, Sterle D. Non-destructive assessment of the effect of crop load and canopy position on peach fruit internal quality and harvest maturity using visible and near infrared spectroscopy. Food Chemistry Food Chemistry 2021, 335, 127626.
- Minas IS, Sterle D. Differential thermal analysis sheds light on the effect of environment and cultivar in peach floral bud cold hardiness. Acta Horticulturae 2020, 1281, 385-392 https://www.actahort.org/books/1281/1281_51.htm

- Minas IS, Blanco-Cipollone F, Sterle D. Near infrared spectroscopy can non-destructively assess the effect of canopy position and crop load on peach fruit maturity and quality. *Acta Hort.* 2020, 1281, 407-412 https://www.actahort.org/books/1281/1281_54.htm
- Black BL, Minas IS, Reighard GL, Beddes T. Alkaline soil tolerance of rootstocks included in the NC-140 'Redhaven' peach trial. *Journal of the American Pomological Society* 2020 in press (accepted).
- Autio W, Robinson T, Blatt S, Cochran D, Francescato P, Hoover E, Kushad M, Lang G, Lordan J, Miller D, Minas IS, Parra Quezada R, Stasiak M, Xu H. Budagovsky, Geneva, Pillnitz, and Malling apple rootstocks affect 'Honeycrisp' performance over eight years in the 2010 NC-140 'Honeycrisp' apple rootstock trial. *J. Amer. Pomological Society* 2020 74, 182-195.
- Reighard GL, Bridges WJr, Archbold D., Atucha A, Autio W, Beckman T, Black B, Chavez DJ, Coneva E, Day K, Francescato P, Kushad M, Johnson RS, Lindstrom T, Lordan Sanahuja J, Minas IS, Ouellette D, Parker M, Pokharel R, Robinson T, Schupp J, Warmund M. Wolfe D. Nine-year rootstock performance of the NC-140 'Redhaven' peach trial across 13 states. *Journal of the American Pomological Society* 2020, 74, 45-56.
- Li K, DiLegge M, Minas IS, Hamm A, Manter D, Vivanco J. Soil sterilization leads to re-colonization of a healthier rhizosphere microbiome. *Rhizosphere* 2019, 12, 100176 <https://www.sciencedirect.com/science/article/abs/pii/S2452219819301259>
- Casamali, B., M.W. van Iersel, and D.J. Chavez. 2021. Plant Growth and Physiological Responses to Improved Irrigation and Fertilization Management for Young Peach Trees in the Southeastern United States. *HortScience* 56:336-346. DOI: 10.21273/HORTSCI15505-20.
- Casamali, B., M.W. van Iersel, and D.J. Chavez. 2021. Nitrogen Partitioning in Young "Julyprince" Peach Trees Grown with Different Irrigation and Fertilization Practices in the Southeastern United States. *Agronomy* 11:350 <https://doi.org/10.3390/agronomy11020350>.
- Mohammed, J., C. Belisle, R. Itle, K. Adhikari, S. Wang and D.J. Chavez. 2021. Volatile profile characterization of commercial peach cultivars grown in Georgia, USA. *Horticulturae* (accepted)
- Viloria, Z. J., R. Bessin, P. O'Neal, C. Ranger, W. Dunwell, and R.T. Villanueva. 2021. Scolytinae in Nursery and Fruit Crops of Western Kentucky and Seasonal Population Patterns of Four Invasive Ambrosia Beetles. *J. Entomological Science.* 56(3): 374-386.
- Wolfe, D., D. Archbold, D. Becker, and G. Travis. 2020. Rootstock Effects on Apple Tree Growth and Yield. 2020 Fruit and Vegetable Crops Research Report. University of Kentucky College of Agriculture, Food and Environment, Agricultural Experiment Station publication PR-779:4-6. <http://www2.ca.uky.edu/agcomm/pubs/PR/PR779/PR779.pdf>
- Zenaida Viloria, Raul Villanueva, Ric Bessin, Win Dunwell. 2021. Using Apple Bolts to Test Insecticide Efficacy Against Ambrosia Beetles. *Proc. Int. Plant Prop. Soc/Acta Hort.* 1145: (in press)

- Cline, J.A., W. Autio, J. Clements, W. Cowgill, R. Crassweller, T. Einhorn, E. Fallahi, P. Francesca, E. Hoover, G. Lang, J. Lordan, R. Moran, M. Muehlbauer, S. Musacchi, M. Stasiak, R. Parra Quezada, T. Robinson, S. Serra, S. Sherif, R. Wiepz, and J. Zandstra. 2021. Early performance of 'Honeycrisp' apple trees on several size-controlling rootstocks in the 2014 NC-140 Rootstock Trial. *J. Amer. Pomol. Soc.* 75:189-202.
- Cline, J. A., W. Autio, J. Clements, W. Cowgill, R. Crassweller, T. Einhorn, E. Fallahi, P. Francescato, E. Hoover, G. Lang, J. Lordan, R. Moran, M. Muehlbauer, S. Musacchi, M. Stasiak, R. Parra Quezada, T. Robinson, S. Serra, S. Sherif, R. Wiepz, and J. Zandstra. Early performance of 'Honeycrisp' apple trees on several size-controlling rootstocks in the 2014 NC-140 rootstock trial. *Journal of the American Pomological Society* 75(4):189-202.
- Cline, J.A. and C. Bakker. 2021. Early Performance of Several Prunus Interspecific Hybrid Rootstocks for Redhaven Peach in Southern Ontario. *Can. J. Plant Science* (in press) <https://doi.org/10.1139/CJPS-2021-0128>
- Fazio G, and Robinson T. 2021. Designer rootstocks: the basis for precision management of apple orchards. *Acta Hort.* 1314:275-286 DOI: 10.17660/ActaHortic.2021.1314.35.
- Lordan, J., P. Francescato and T. Robinson. 2021. Effects of tree density, tree shape, and rootstock on 'Bosc' pears. *Acta Hort.* 1303, 163-170 DOI: 10.17660/ActaHortic.2021.1303.24.
- Saraf, H., A.A. Thompson, M. Williams, and G.M. Peck. 2021. Compost applications increase bacterial community diversity in the apple rhizosphere. *Soil Science Society of America Journal.* 85:1105–1121. <https://doi.org/10.1002/saj2.20251>
- Robinson, T.L., P. Francescato and J. Lordan. 2021. Advances in precision crop load management of apple. *Acta Hort.* 1314:133-138 DOI: 10.17660/ActaHortic.2021.1314.18.
- Marini, R.P., E.K. Lavelly, T. Auxt Baugher, R. Crassweller, and J.R. Schupp. 2021. Using logistic regression to predict the probability that individual 'Honeycrisp' apples will develop bitter pit. *HortScience*. In press. <https://doi.org/10.21273/HORTSCI16081-21>.
- Zahid, A., L. He, D. Choi, J. Schupp and P. Heinemann. 2021. Investigation of branch accessibility with a robotic pruner for pruning apple trees. *Transactions of the ASABE MS-14132-2020* (in Press).
- Zahid, A., Md Sultan Mahmud, L. He, P. Heinemann, D. Choi, and J. Schupp. 2021. Technological Advancements Towards Developing a Robotic Pruner for Apple Trees: A Review. *Computers and Electronics in Agriculture COMPAG-D-21-00252R1*: (in press).
- Zahid, A., Md S. Mahmud, L. He, J. Schupp, D. Choi, and P. Heinemann. 2021. Branch Cutting Dynamics Analysis Envisioned for Robotic Pruning of Apple Trees. *HortTech*. Ms# 04924R (in Press)
- Adelberg, J., J. Naylor-Adelberg, S. Miller, K. Gasic, G. Schnabel, P. Bryson, C. Saski, S. Parris and G. Reighard. 2021. In vitro co-culture system for Prunus spp. and Armillaria mellea in phenolic foam rooting matrix. *In Vitro Cellular & Developmental Biology- Plant*. Online Jan. 6, 2021. 11 pp. <https://doi.org/10.1007/s11627-020-10136-2>

- Wheeler, W.D., B. Black and B. Bugbee. Water stress in dwarfing rootstocks: Increased carbon partitioning to roots facilitates improved tolerance of drought in Krymsk® 6 than Krymsk® 5. *Horticulturae* 7, 424, doi.org/10.3390/horticulturae7110424
- Anthony B. and Musacchi S., 2021. Dwarfing mechanisms and rootstock-scion relationships in apple. *Italus Hortus* Vol. 28 (2021), Pages 22-36. DOI: 10.26353/j.itahort/2021.2.2236.
- Biasuz, E. C., & Kalcsits, L. (2021). Rootstocks induce functional differences that affect carbon isotope discrimination and water relations in the apple scion. In-review and pre-print published. 10.22541/au.162578061.13443316/v1.
- Biasuz, E. C., & Kalcsits, L. (2021). Variation in scion water relations mediated by two newly released Geneva series rootstocks. bioRxiv. <https://doi.org/10.1101/2021.07.20.453132>.
- Valverdi, N. A., & Kalcsits, L. (2021). Apple rootstock genotype affects scion responses to water limitations under field conditions. *Acta Physiologiae Plantarum*, 43(7), 1-14.
- Valverdi, N. A., & Kalcsits, L. (2021). Rootstock Affects Scion Nutrition and Fruit Quality during Establishment and Early Production of 'Honeycrisp' Apple. *HortScience*, 56(2), 261-269.
- Moran, R., B.J. Peterson, G. Fazio and J. Cline. 2021. Low temperature tolerance in apple shoots following exposure to warm temperatures in late winter. *HortScience* 56:(6):1-10. <https://doi.org/10.21273/HORTSCI15665-20>
- Einhorn, T.C.** 2021. A review of recent *Pyrus*, *Cydonia* and *Amelanchier* rootstock selections for high-density pear plantings*. *Acta Horticulturae*, 1303: 185-196.
- Lang, G.A.** and M.D. Whiting. 2021. Canopy architecture - optimizing the interface between fruit physiology, canopy management, and mechanical/robotic efficiencies. *Acta Hort.* 1314:287-296. <https://doi.org/10.17660/ActaHortic.2021.1314.36>

Thesis

Wheeler, William. Fruit tree responses to water stress: Automated physiological measurements and rootstock responses. PhD Dissertation. <https://digitalcommons.usu.edu/>

Poster Presentations

Dylan Teel, Elina Coneva, Floyd Woods, Nylan Holmes and Matthew Price. 2020. Rootstock Effects on Fruit Quality of "Aztec Fuji" Apple. Southern Region Fruit and Vegetable Growers Conference, Savannah, GA, Jan. 10-13, 2020.

Graziano, J., Baker, J., Weber, D., and Farcuh, M. Maturity at harvest and its effects on fruit quality of Gala and Honeycrisp apple cultivars grown in the Mid-Atlantic. Mid-Atlantic fruit and vegetable convention, Hershey, PA, USA. Feb. 8-11, 2021

Crassweller, R., D. Smith. 2021. Third generation apple system trials – Biaxial trees. E-poster presented at the Mid-Atlantic Fruit & Vegetable Conference 8-11 February 2021.

Crassweller, R., D. Smith. 2021. Converting established training systems to a narrower width through mechanical hedging. E-poster presented at the Mid-Atlantic Fruit & Vegetable Conference 8-11 February 2021.

- Crassweller, R., D. Smith. 2021. 2020. Tree fruit rootstock trials at Rock Spring. E-poster presented at the Mid-Atlantic Fruit & Vegetable Conference 8-11 February 2021
- He, L., J. Schupp and D. Choi. 2021. Targeted blossom/ green fruit thinning with variable rate sprayer. E-poster presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 8-11 Feb 2021. He, L., J.
- Schupp, D. Choi and D. Weber. 2021. Branch and fruit accessibility for mechanical operations with various tree canopies. E-poster presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 8-11 Feb 2021.
- Schupp, J., C. Lara, and M. Schupp. 2021. Effect of rootstock on tree size, yield and fruit size of Cresthaven peach. E-poster presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 8-11 Feb 2021.
- Schupp, J., C. Lara, and M. Schupp. 2021. Effect of tree spacing on yield growth, and fruit quality of a high-density pedestrian peach orchard. E-poster presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 8-11 Feb 2021.
- Schupp, J., C. Lara, and M. Schupp. 2021. Effect of Mechanical Dormant and Summer Hedging on Growth, Yield and Fruit Quality of Apple Trees in High-Density Plantings. E-poster presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 8-11 Feb 2021.
- Schupp, J. R., M. A. Schupp and H. E. Winzeler. 2021. Effect of rootstock and tree density on growth and yield of 'CoralStar' peach trees. E-poster presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 8-11 Feb 2021
- Zahid, A., Md. S. Mahmud, L. He, D. Choi, P. Heinemann, and J. Schupp. 2021. Concept Design of a robotic pruner for apple trees. E-poster presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 8-11 Feb 2021.
- Crassweller, R., D. Smith. 2020. 2019 Apple Rootstock Evaluations at Rock Springs. Mid-Atlantic Fruit and Vegetable Conference. Hershey, PA. January 28-30.
- Crassweller, R., D. Smith. 2020. Third Generation Apple System Trials – Biaxial Trees. Mid-Atlantic Fruit and Vegetable Conference. Hershey, PA. January 28-30.
- Victor Blanco, Erica Casagrande Biasuz, Gennaro Fazio, Lee Kalcsits. Rootstock affects horticultural performance of 'WA 38' apple trees grafted in Washington State. American Society for Horticultural Sciences Annual Meeting. Poster Presentation. August 4, 2021.
- Claudia Baldassi presented a poster titled "Evaluating different rootstock crop load combinations to control biennial bearing and fruit quality of 'Honeycrisp' in Washington State" at the ISHS International conference XII Orchard Systems held virtually on July 26-30, 2021.
- Moran, R., P. Ginakes, J. Delisle and G. Hamilton. 2021. Midwinter flower bud and shoot tissue cold hardiness in 34 peach cultivars grown in New Hampshire, USA. HortScience 56(9S):TBD. Presented at the [2021 ASHS Annual Conference \(confex.com\)](https://www.confex.com/2021/ASHS/).

Technical Reports/Commercial Industry Reports

- Elkins, R and C. Shaffer, B. Lampinen. 2020. High density orchard systems for European pear: 2013 NC-140 Regional Rootstock Project (2019 progress report) I. Overall training systems,

spacing, and rootstocks. 2019 Pear Research Reports, California Pear Advisory Board, Sacramento, California. <http://calpear.com>. 35pgs.

Elkins, R. 2020. Comparison of Horner 4, OHxF 87 and OH.F 97 rootstocks under varying growing conditions and cultural practices in Lake County, California. 2019 Pear Research Reports, California Pear Advisory Board, Sacramento, California. <http://calpear.com>. 12 pgs.

Extension Fact Sheet Publications

Sterle DG, Minas IS (2019). Cold hardiness assessment of peach flower buds using differential thermal analysis (DTA) in western Colorado (dormant season 2018-19). CSU Pomology web page, 24 updates. https://minas.agsci.colostate.edu/wp-content/uploads/sites/60/2019/01/Peach-floral-bud-cold-hardiness-update-14-1_25_19.pdf

Sterle DG, Minas IS (2020). Cold hardiness assessment of peach flower buds using differential thermal analysis (DTA) in western Colorado (dormant season 2019-20). CSU Pomology web page, 21 updates. [https://minas.agsci.colostate.edu/wp-CO-2020 State Report NC-40.content/uploads/sites/60/2020/02/Peach-floral-bud-cold-hardiness-update-21-2_14_20.pdf](https://minas.agsci.colostate.edu/wp-CO-2020%20State%20Report%20NC-40.content/uploads/sites/60/2020/02/Peach-floral-bud-cold-hardiness-update-21-2_14_20.pdf)

Faruch, M. September 2021. How can Growers Determine Apple Fruit Maturity and Optimal Harvest Dates? Univ. of Maryland Ext. Pub. Number: FS-1180. Link: [https://extension.umd.edu/sites/default/files/publications/91.%20Apple fruit maturity FS-1180.pdf](https://extension.umd.edu/sites/default/files/publications/91.%20Apple%20fruit%20maturity%20FS-1180.pdf).

Cai, Y. # and Faruch, M. 2021. Determining Peach Fruit Maturity. University of Maryland Ext. Vegetable and Fruit News Vol.12 no. 4. July 15, 2021: 9-12.

Capino, A. \$ and Faruch, M. 2021. Ethylene and the Regulation of Fruit Ripening. Univ. of Maryland Ext. Vegetable and Fruit News Vol.12 no. 1. April 15, 2021: 3-4.

Robinson, T. and L. Gonzalez. 2021. Do Bi-axis Trees Improve Apple Yield or Fruit Quality? Fruit Quarterly 29:(2):5-7.

Gonzalez, L. and T.L. Robinson. 2021. Effect of different reflective ground covers on the coloring of apples at harvest. Fruit Quarterly 29:(4):10-15.

Agnello, A.M., B. Brown, J. Carroll, L. Cheng, K. Cox, P.D. Curtis, A. Dunn, M. Helms and T. Robinson. 2021. Pest management guidelines for commercial tree-fruit production 2021, p. 306. Cornell University, Ithaca, NY, USA.

Miranda Sazo, M. and T. Robinson. 2021. Intentional 'delay' of the dormant pruning cut decision for 'Honeycrisp' and other important biennial cultivars (Fuji). Lake Ontario Fruit Newsletter 2021, March.

Robinson, T. 2021. Bloom thinning update and guidance by the PTGM Lake Ontario Fruit Newsletter 2021 May 4, 2021.

Robinson, T. 2021. New recommendation for return bloom sprays applied in 2021 for good repeat bloom in 2022. Lake Ontario Fruit Newsletter 2021, June.

Cheng, L., T. Robinson, G. Fazio and M. Miranda Sazo. 2021. Fertilization of Honeycrisp with consideration of rootstock to manage bitter pit. Lake Ontario Fruit Newsletter 2021. July.

Robinson, T., L. Cheng, C. Watkins, M. Miranda Sazo, C. Kahlke and M. Basedow. 2021. Announcing peel sap analysis for early prediction of bitter pit in 'Honeycrisp'. Lake Ontario Fruit Newsletter 2021 July.

Robinson, T.L., C. Watkins, D. Donahue and M. Basedow, M. Miranda Sazo and Kahlke, C. 2021. The Use of Plant Growth Regulators Near Harvest in 2021. Lake Ontario Fruit Newsletter 2021 August.

Robinson, T. and P. Francescato. 2021. Defoliation of Trees in On-farm Nurseries. Lake Ontario

Popular Articles

Crassweller, R. 2021 Growing Fruit Plants from Seed. <https://extension.psu.edu/growing-fruitplants-from-seed>

Crassweller, R., R. C. Pollock. 2021. Why all the new apple varieties. <https://extension.psu.edu/why-all-the-new-apple-varieties> Crassweller, R. 2021. Frost, Critical Temperatures & Frost Protection. <https://extension.psu.edu/frost-critical-temperatures-and-frost-protection>

Crassweller, R., K. Peter, G. Krawczyk, T. Ford, D. Ward, D. Seifrit. 2020. New orchard field guide from the Penn State Extension Tree Fruit Team. <https://extension.psu.edu/new-orchard-fieldguide-from-the-penn-state-extension-tree-fruit-team>

Crassweller, R., L. Kime. 2021. Trellis Construction Workbook. <https://extension.psu.edu/trellisconstruction-workbook>

Crassweller, R., R. Pollock. 2021. Why all the new apple varieties? <https://extension.psu.edu/why-all-the-new-apple-varieties> Crassweller, R., K. Peter, G. Krawczyk, T. Ford, D. Seifrit, D. Weber. 2020. New orchard field guide from the Penn State Extension Fruit Team. <https://extension.psu.edu/new-orchard-fieldguide-from-the-penn-state-extension-tree-fruit-team>

He, L., J. Schupp, and D. Choi. 2021. Targeted blossom/ green fruit thinning with variable rate sprayer (Year 1 Report). PA Fruit News 101:52-53.

He, L., J. Schupp, D. Choi and D. Weber. 2021. Branch and fruit accessibility for mechanical operations with various tree canopies (Final report). PA Fruit News 101:50-52.

Schupp, J., C. Lara, K. Miller, and M. Schupp. 2021. Effect of Rootstock on Performance of Cresthaven Peach Trees. PA Fruit News 101 (1):30.

Schupp, J., M. Schupp, K. Miller, and C. Lara. 2021. Effect of Mechanical Dormant and Summer Hedging on Growth, Fruit Quality and Return Bloom of Apple Trees in High-Density Plantings. PA Fruit News 101 (1):24.

Schupp, J., C. Lara, M. Schupp and K. Miller. 2021. Development of a High Density, Highly Mechanized, Pedestrian Peach System. PA Fruit News 101 (1):23

Crassweller, R. T. Baugher L. Kime 2021 Trellis Construction Workbook (Updated 2021). <https://extension.psu.edu/trellis-construction-workbook>

Schupp, J. 2021. Amid-Thin W® is now labelled for thinning apples at full bloom. https://extension.psu.edu/amid-thin-w-is-now-labeled-for-thinning-apples-at-fullbloom?j=595078&sfmc_sub=33456380&l=159_HTML&u=13502975&mid=7234940&jb=2&utm_medium=email&utm_source=MarketingCloud&utm_campaign=TFPS_2021_APR_9_AT_EM&utm_content=TFPS_2021_APR_9_AT_EM&subscriberkey=0030W00003NQN1QAH

Bradshaw, T. 2020. Vermont's Evolving Apple Industry. Vermont Almanac. <https://vermontalmanac.org>

Muehlbauer, M., R. Magron, and W. Cowgill. 2020. Update on NC-140 Fuji and Honeycrisp Apple Rootstock Trials in New Jersey. Horticultural News, Volume 101 Spring. P. 17-21.

Lang, G., J. Alvarado, and C. Montalvo. 2021. Manejo de huertos de cerezos con cobertores. UC Davis Chile Life Sciences Innovation Center fact sheet.

Lang, G., J. Alvarado, and C. Montalvo. 2021. Por qué invertir en sistemas de protección de huertos de cerezos? UC Davis Chile Life Sciences Innovation Center fact sheet.

Lang, G.A. 2021. Reflecting on the 21st century so far. American Fruit Grower 141(12):14. <https://www.growingproduce.com/fruits/reflections-on-how-the-21st-century-is-going-so-far-for-cherry-growing/>

Lang, G.A. 2021. Ways to sharpen your sweet cherry production systems with precision. American Fruit Grower 141(9):18. <https://www.growingproduce.com/fruits/how-to-stay-sharp-as-sweet-cherry-production-systems-evolve/>

Lang, G.A. 2021. Harnessing evolution as cherry production systems make progress. American Fruit Grower 141(5):32-33. <https://www.growingproduce.com/fruits/harnessing-evolution-as-cherry-production-systems-make-progress/>

Lang, G.A. 2020. Cherry rootstock and training decisions: thoughts for the 2020s. American Fruit Grower 140(12):24-25. <https://www.growingproduce.com/fruits/cherry-rootstock-and-training-decisions-thoughts-for-the-2020s/>

Scientific Oral Presentations

Elina D. Coneva. 2020. Assessment of Size Controlling Peach Rootstocks for High Density Orchards in Alabama. SR ASHS Annual Meeting. Louisville, KY, February 5.

Dylan G. Teel, Elina D. Coneva, and Matthew D. Price. 2020. Effect of Rootstock Cultivar on Consumer Quality Attributes of 'Aztec Fuji' Apple. SR ASHS Annual Meeting. Louisville, KY, February 5.

Minas IS. "The peach industry in USA: challenges & opportunities" International Peach Congress, Freskon 2019, Apr 2019, Thessaloniki, Greece. https://freskon.helexpo.gr/en/2019_Peach_Congress_Speaker_Dr_Ioannis_Minas
<http://www.imathiotikigi.gr/index.php/agrotika/item/4294-kalliergeia-rodakinou-nektarinioy-stis-ipa-times-paragogoy-kai-nea-ypokeimena-vinteo-me-omilia-tou-k-mina-ioanni>

Belisle, C., K. Adhikari, and D.J. Chavez. 2021. Understanding the variation in volatile compounds among commercial peach varieties. Proc. IX Intl. Peach Symp. Acta Hort. 1304:367-376. DOI 10.17660/ActaHortic.2021.1304.51.

Liu, J., O. Lindstrom, A. Malladi, C. Robacker, and D.J. Chavez. 2021. Low temperature damage of peach floral buds as assessed by vital staining. Proc. IX Intl. Peach Symp. Acta Hort. 1304:265-272. DOI 10.17660/ActaHortic.2021.1304.37.

- Liu, J., B. Casamali, M. van Iersel, O. Lindstrom, and D.J. Chavez. 2021. The effect of fertilization and irrigation treatments on cold hardiness of young peach plants. Proc. IX Intl. Peach Symp. Acta Hort. 1304:215-220. DOI 10.17660/ActaHortic.2021.1304.30.
- Beckman, T.G., D.J. Chavez, H. Scherm, and K. Taylor. 2021. Evaluation of Chemical, Genetic and Biological Control Strategies for Armillaria Root Rot of Peach. Proc. IX Intl. Peach Symp. Acta Hort. 1304:355-360. DOI 10.17660/ActaHortic.2021.1304.49.
- Villoria, Zenaida (Presenter & Author), R.Villanueva, R. Bessin, and W. Dunwell, ESA Annual Meeting, Using apple bolts to test insecticide efficacy against ambrosia beetles. Presented at the Eastern Regions of ESA, March 22-24, 2021 online, and a poster presented at the Eastern Region of the International Plant Propagators Society, September 28-October 1, Morton Arboretum, Lisle, Illinois.
- Mirbod, O., D. Choi, L. He, P. Heinemann, R. Marini, and J. Schupp. 2021. In-Field Apple Size and Location Tracking Using Machine Vision to Assist Fruit Thinning and Harvest Decision-Making. Proc. ASABE DOI: <https://doi.org/10.13031/aim.212100831>. Paper Number: 210083
- Gasic, K., Reighard, G.L., C.A. Saski, J. Adelberg, K. Baumgartner, P. Brannen, D. Chavez, T. Gradziel, R. Hammerschmidt, A. Iezzoni, B. Koc, T. Mark, J.C. Melgar, G. Schnabel, N. Tharayil, and M. Vassalos. 2021. Solutions to the Armillaria root rot threat affecting the U.S. stone fruit industry. Southeastern Professional Fruit Workers Conference. Virtual. Oct. 28, 2021.
- Reighard, G. and D. Ouellette. 2021. Performance of new rootstock cultivars in South Carolina. Southeastern Professional Fruit Workers Conference. Virtual. Oct. 28, 2021.
- Reighard, G. 2021. Implementing short- and long-term approaches to manage ARR. Armillaria planning conference. Virtual. October 25, 2021.
- Gasic, K., S. Miller, G. Barac, C. Saski, G. Schnabel, and G. Reighard. Breeding for Prunus rootstock tolerance to replant diseases. 2021. XII International Symposium on plum and prune genetics, breeding and pomology. Zlatibor, Serbia. Sept. 14-17, 2021. Poster PI-07
- Gasic, K., C.A. Saski, J. Adelberg, K. Baumgartner, P. Brannen, D. Chavez, T. Gradziel, R. Hammerschmidt, A. Iezzoni, B. Koc, T. Mark, J.C. Melgar, G.L. Reighard, G. Schnabel, N. Tharayil, and M. Vassalos. 2021. Solutions to the Armillaria Root Rot Affecting the U.S. Stone Fruit Industry. ASHS Virtual Annual Meeting, Denver, CO., August 9, 2021.
- Reighard, G.L. 2021. Moderator for Rootstock Session at the ISHS XII International Symposium on Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems. Virtual. July 29, 2021.
- Reighard, G.L. and NC-140 members. 2021. Thirty-three years evaluating rootstocks for peach in the NC-140: what have we learned. ISHS XII International Symposium on Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems. Virtual. July 28, 2021.
- Reighard, G.L. 2021. Panelist for the "Brown Bag" Rootstock Session of the XIIth International Society of Horticultural Science Symposium on Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems. WSU hosted via Virtual. July 28, 2021.
- Reighard, G.L., K. Gasic, C.A. Saski, J. Adelberg, K. Baumgartner, P. Brannen, D. Chavez, T. Gradziel, R. Hammerschmidt, A. Iezzoni, B. Koc, T. Mark, J.C. Melgar, G. Schnabel, N. Tharayil, and M. Vassalos. 2021. Solutions to the Armillaria Root Rot Affecting the U.S. Stone Fruit Industry. ISHS XII International Symposium on Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems. Virtual. July 26, 2021
- Foster, J. Kingsley-Richards, S.L., and Bradshaw, T. Effect of Summer Hedging on Return Bloom, Yield, Tree Growth, and Juice Quality of Apples Grown for Cider. Not for publication. Proceeding from XII International Symposium on Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems. (Acta Horticulturae). Submitted June 2021.

- Foster, J. Kingsley-Richards, S.L., and Bradshaw, T. Summer Applications of NAA and Ethephon Show Little Effect on Return Bloom, Yield, Tree Growth, and Juice Quality of Cider Apple Cultivars. Proceeding from XII International Symposium on Integrating Canopy, Rootstock and Environmental Physiology in Orchard Systems. (Acta Horticulturae). Submitted June 2021
- Kalcsits, L., Valverdi, N., & Reid, M. (2021). Timing of water limitations affects source to sink differences in $\delta^{13}\text{C}$ composition in apple. Accepted to ISHS Irrigation Management in Horticultural Crops and the pre-print is published in bioRxiv. <https://doi.org/10.1101/2021.07.20.453133>
- M. Schwartz and M. Muehlbauer. 2021. "Use of Rootstocks for Optimization of Quality, Growth, and Yield of Honeycrisp Apples in New Jersey." NR-ASHS Conference. Virtua
- Shwartz, M. 2021. Cook Honors thesis project. Use of Rootstocks for Optimization of Quality, Growth, and Yield of Honeycrisp Apples.
- Moran, R. 2021. Shoot and flower bud cold temperature tolerance in three peach cultivars exposed to four days of warm deacclimating temperatures. [2021 Orchard Systems | ISHS Symposium](#), International Society of Horticultural Science. Oral, Presented virtually.
- Einhorn, T. 2021. Advances and future vision for managing pear trees in modern high-density orchards. Wallace Heuser Presidential Lecture, International Fruit Tree Association, Feb. 24, 2021.

Outreach Oral Presentations

- Coneva, E. 2020. Size-Controlling and Disease Resistant Peach Rootstocks for Sustainable Peach Production in Alabama. National Association of County Agricultural Agents Annual Conference, Virginia Beach, VA (online).
- Elkins, R. Rootstocks and orchard systems for European pears. 2020 Sacramento River District Pear Research Meeting, February 4, 2020, Walnut Grove and 2020 North Coast Pear Research Meeting, February 6, 2020, Lakeport.
- Tweedy, Carolina E. Developing rooting protocol on non-P. communis pears and promising wild pear germplasm: a prerequisite study for in vitro screening Armillaria resistance. 2020 Sacramento River District Pear Research Meeting, February 4, 2020, Walnut Grove and 2020 North Coast Pear Research Meeting, February 6, 2020, Lakeport.
- Minas IS. "The impact of the environment & genotype on peach cold hardiness & damage", Mid-Atlantic Fruit & Vegetable Convention, Jan 2020, Hershey, PA.
- Minas IS. "Pre- & postharvest factors affecting peach fruit quality", Mid-Atlantic Fruit & Vegetable Convention, Jan 2020, Hershey, PA.
- Minas IS. "The peach industry in USA: challenges & opportunities for CO peaches", Western Colorado Horticultural Society Annual Conference, Jan 2020, Grand Junction, CO.
- Anthony BM, Minas IS. "Influence of Thinning Severity on Peach Productivity and Fruit Quality", Western Colorado Horticultural Society Annual Conference, Jan 2020, Grand Junction, CO.
- Pieper J, Minas IS. "Rootstock and canopy position effect on peach fruit quality", Western Colorado Horticultural Society Annual Conference, Jan 2020, Grand Junction, CO.
- Sterle DG, Minas IS. "Peach Cold Hardiness in Western Colorado", Western Colorado Horticultural Society Annual Conference, Jan 2020, Grand Junction, CO.
- Sterle DG, Minas IS. Peach Hardiness in Western Colorado. Roger's Mesa Brown Bag Talk

- Minas IS. "Peach Cold Hardiness & Rootstock Research Update" 2019 Michigan Spring Peach Meeting, Michigan Peach Sponsors & Michigan Horticultural Society, SW Michigan Research and Extension Center, Michigan State University, Mar 2019, Benton Harbor, MI.
- Minas IS. "Environmental bases for cold hardiness & damage in peach", Indiana Horticultural Congress & Trade Show, Department of Horticulture and Landscape Architecture, Purdue University & Purdue Cooperative Extension Service, Feb 2019, Indianapolis, IN.
- Minas IS. "Pre- & postharvest factors affecting peach fruit quality", Indiana Horticultural Congress & Trade Show, Department of Horticulture and Landscape Architecture, Purdue University & Purdue Cooperative Extension Service, Feb 2019, Indianapolis, IN.
- Minas IS. "Environmental Bases for Cold Hardiness and Damage in Peach", Western Colorado Horticultural Society Annual Conference, Jan 2019, Grand Junction, CO.
- Minas IS. "CSU Pomology Research Program Update", Western Colorado Horticultural Society Annual Conference, Jan 2019, Grand Junction, CO.
- Minas IS. "Fruit growth & thinning-Harvest & postharvest handling", Lecture within the frame of the 2nd Principles of Tree-Fruit Production: beginner growers' edition workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 20, 2020, Grand Junction, CO.
- Minas IS. "Pruning peach and cherry trees under different canopy architectures in the CSU's experimental orchard", Demonstration in the field within the frame of the 2nd Principles of Tree-Fruit CO-2020 State Report NC-140 Production: beginner growers' edition workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 20, 2020, Grand Junction, CO.
- Minas IS. "Tree pruning, training & cropping systems", Lecture within the frame of the 2nd Principles of Tree-Fruit Production: beginner growers' edition workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State Univ., January 20, 2020, Grand Junction, CO.
- Minas IS. "Bearing habits of fruit trees-Flowering & pollination-Dormancy, rest breaking, cold hardiness & frost protection", Lecture within the frame of the 2nd Principles of Tree-Fruit Production: beginner growers' edition workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 20, 2020, Grand Junction, CO.
- Minas IS. "Climate & Tree Fruits-Cultivars & Rootstocks selection-Orchard establishment", Lecture within the frame of the 2nd Principles of Tree-Fruit Production: beginner growers' edition workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 20, 2020, Grand Junction, CO.
- Minas IS. "Pruning & training sweet cherry trees on TSA, Super Slender Axe (SSA), Kym Green Bush (KGB), Bi-axe and Bi-UFO for high density plantings", Demonstration in the field within the frame of the 1st Pruning & Training: Peaches & Cherries under different training systems workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 14, 2019, Grand Junction, CO.
- Minas IS. "Pruning & training peach trees on Perpendicular-V, Bi-axe (V in the row) as well as tall spindle axe (TSA) for high density plantings", Demonstration in the field within the frame of the 1st Pruning & Training: Peaches & Cherries under different training systems workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 14, 2019, Grand Junction, CO.

- Minas IS. "Pruning & Cytospora Management", Lecture within the frame of the 1st Pruning & Training: Peaches & Cherries under different training systems workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 14, 2019, Grand Junction, CO.
- Minas IS. "Peach & cherry training systems", Lecture within the frame of the 1st Pruning & Training: Peaches & Cherries under different training systems workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 14, 2019, Grand Junction, CO.
- Minas IS. "Tree pruning & training responses", Lecture within the frame of the 1st Pruning & Training: Peaches & Cherries under different training systems workshop (30 tree fruit growers participants), Organized under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 14, 2019, Grand Junction, CO.
- Minas IS. "Bearing habits of fruit trees", Lecture within the frame of the 1st Pruning & Training: Peaches & Cherries under different training systems workshop (30 tree fruit growers participants), Organized CO-2020 State Report NC-140 under the frame of Western Colorado Horticulture Society (WCHS) Annual meeting, WCRC-OM, Colorado State University, January 14, 2019, Grand Junction, CO.
- Faruh, M. Effect of Rootstocks on the Quality Characteristics of Honeycrisp Fruit Tree Fruit: Horticulture/Physiology Session. Mid-Atlantic fruit and vegetable convention, Hershey, PA, USA. February 10, 2021.
- Faruh, M. Evaluating the Use of Reflective Groundcovers on Fruit Quality of Honeycrisp and Fuji Apple Cultivars in the Mid-Atlantic. Young Grower Alliance Session. Mid-Atlantic fruit and vegetable convention, Hershey, PA, USA. February 9, 2021
- Faruh, M. Effect of Apple Maturity and Storage Temperatures on Fruit Quality. Bay Area Fruit School, Queenstown, MD, February 10, 2021
- Peck, G. 2021 Hard Cider PWT Tour: Capital District Region. Tour stops included, Samascott Orchards (Kinderhook, NY), Indian Ladder (Altamont, NY), and Nine Pin Cider (Albany, NY). 25 Aug. Attendees: 85.
- Robinson, T.L. 2021. Precision thinning: From dormant to rescue thinning. NY Fruit Conference, Feb. 4, 2021. (250 people).
- Robinson, T.L. 2021. Plant new orchards for coming technology. NY Fruit Conference, Feb. 4, 2021. (250 people).
- Robinson, T.L., L. Cheng, M. Miranda Sazo, C. Kahlke, M. Basedow, C. Watkins. 2021. A statewide effort in 2021 to manage crop load, nutrient status, and bitter pit of Honeycrisp. NY Fruit Conference, Feb. 4, 2021. (250 people).
- Robinson, T.L., L. Cheng, M. Miranda Sazo, C. Kahlke, M. Basedow, C. Watkins. 2021. A multipronged strategy to manage Honeycrisp in 2020. NY Fruit Conference, Feb. 4, 2021. (250 people).
- Schupp, J. 2021. Results from REDpulse defoliation trial. Presented at the virtual Penn State Winter Commercial Tree Fruit School, 22 Feb 2021.
- Schupp, J. 2021. New technologies for peach production. Presented at the virtual Penn State Winter Commercial Tree Fruit School, 1 March 2021.
- Schupp, J. 2021. Future Directions for Peach Training Systems. Presented at the virtual Cornell Extension Stone Fruit Training Systems Workshop, 16 March 2021.
- Schupp, J. 2021. Chemical Thinning Considerations for 2021. Presented at the 2021 Virtual Orchard Meeting II, 6 May 2021.
- Schupp, J. 2021. Peach rootstock demonstrations. Linvilla Farms, Media, PA, July 7, 2021

Hilltop Orchards, York Springs, PA, July 22, 2021 Shenot Farm, Wexford, PA, July 28, 2021 Schupp, J., M. Farquh, B. Slaybaugh and J. Cline. Color enhancing technologies for apples: Reflective fabrics and defoliators – Grower panel presented at the virtual Mid-Atlantic Fruit and Vegetable Conference, 10 Feb 2021.

Schupp, J. 2021. Enhancing Competitiveness of Pennsylvania Peach Growers with Improved Growing Systems and Size-Controlling Rootstocks. Penn State Ag Council College of Ag Sciences Research Tour. Fruit Research and Extension Center, Biglerville, PA 30 Sept 2021.

Reighard, G.L. 2021. Cropping southeastern peaches consistently under a warming climate. Southeast Regional Fruit & Vegetable Conference. Virtual. Jan. 7, 2021.

Black, B. "Research Update: rootstocks, models and HD cherries" Utah State Horticulture Association annual conference (virtual) meeting. 21 Jan 2021 (attendance unavailable, typically 90+).

Black, B. "Micro-scale Fruit Farming," Micro-scale farming session, Utah Urban and Small Farms Conference. Virtual Meeting 1 March 2021 (205 participants).

Bradshaw, T. New England Cider Apple Project: Early results. Northeast Integrated Pest Management (IPM) Research Update Conference (online). 3/31/ 2021

Bradshaw, T. All about crabapples. Friends of the UVM Horticulture Farm Workshop. 3/20/2021

Bradshaw, T. Tree Row Volume: What it is, why it matters, and how to use it. New England Winter Fruit Seminar Series. 3/23/2021

Bradshaw, T. Apples. Vermont Agriculture and Food System Strategic Plan presentation to the House & Senate Agriculture Committee. 2/11/2021

Bradshaw, T. Cider apples in 2021: Where do we Stand? New England Winter Fruit Seminar Series. 2/09/2021

Casagrande Biasuz, E., Lee Kalcsits. Rootstocks Affect the Hydraulic System in *Malus domestica* Borkh. with Downstream Consequences to Gas Exchange, Isotope Composition, and Growth.

Evans K (2021) Pear rootstock and apple scion breeding. WSU Research Experience and Education Undergraduate program field visit. July 9th, 2021.

Griffin A. (Advisor Prof. Stefano Musacchi) presented his seminar titled "Apple Rootstocks: Tools for Orchard Management (A rootstock review) and graduated in M.S. in Agriculture on August 12th 2021.

Kalcsits, L. Rootstock Choice Strongly Affects Bitter Pit Incidence in Honeycrisp. Washington State Tree Fruit Association Annual Meeting. December 6th, 2020.

Musacchi S. (Author & Presenter), How to Optimize Fruit Quality in Modern Apple Orchards: The Roles of Light, Training System, Rootstocks, and Crop Load. Robert Carlson Lecture. 2021 IFTA Annual Conference. Wednesday, Feb 24th, 2021.

Musacchi, S. 14o SENAFRUT (Brazil) Virtual Conference. November 17, 2020, "Rootstocks and Training Systems for Modern Apple Orchards," SENAFRUT, Virtual, Brazil. (November 17th, 2020).

Teh SL (2021) Pear rootstock breeding. HORT 503 Guest Lecture (virtual format). November 15th, 2021.

Teh SL C (2021) Overview of WSU apple scion and pear rootstock breeding programs. Field Tour – Cascade Christian Academy High School. Orondo, WA. May 4th, 2021.

Teh SL, Evans K, Dhingra A (2021) WSU pear rootstock breeding – continuing report. Northwest Pear Research Review (virtual format). February 17th, 2021.

Victor Blanco, Terence Robinson, Sherif Sherif, Brent Black, Jon Clements, Rob Crassweller, Essie Fallahi, Renae Moran, Megan Muehlbauer, Dwight Wolfe, Hao Xu, Lee Kalcsits. Rootstock and growing environment affect fruit nutrient profile and bitter pit incidence of apple. International Society of Horticultural Sciences Symposium on Mineral Nutrition of Fruit Crops. June 29th, 2021

- Lang, G.A. 2021. Orchard Systems for Labor Efficiencies and Profits. Cherry Institute, Washington State University & Washington State Fruit Comm., Jan 12 (virtual).
- Lang, G.A. 2021. Tart and Sweet Cherry Rootstocks and Production Systems That Optimize Labor Efficiency, Yield Consistency, and Fruit Quality. Northwest Michigan Orchard and Vineyard Show, Jan 19 (virtual).
- Lang, G.A. 2021. The Evolution of Sweet Cherry Production Systems: Training Innovations, Efficiencies, and Their Physiological Basis. Mid-Atlantic Fruit and Vegetable Conference, Feb 11 (virtual).
- Lang, G.A. 2021. MSU Peach Tree Training Project Update. Michigan Spring Peach Meeting, March 9 (virtual).
- Lang, G.A. 2021. The Evolution of Sweet Cherry Production Systems. NY Stone Fruit Workshop, March 16 (virtual).
- Lang, G.A. 2021. The Future of Sweet Cherry Orchard Systems. Holovousy Cherry Field Day, Czech Republic, Jun 23 (virtual).
- Lang, G.A. 2021. Management for Orchards With and Without Cover Systems and the Expected Effects by Zone: Physiological Considerations. UC-Davis/Chile Extension program, July 8 (virtual).
- Lang, G.A. 2021. New Technologies in Cherry Production. Fedefruta Fruittrade annual show, Sept 28 (virtual).
- Lang, G.A. 2021. Optimizing Fruit Tree Architecture for Production Efficiencies, ICT Adaptation, High Yields and Premium Quality Fruit. Smart AgriTechnology Expo, Bosnia, Nov 16 (virtual).
- B. Sallato, A. Wallis, and M. Miranda Sazo. 2021. Honeycrisp Virtual Meet-up: Crop Load Management. Jun 3 (virtual).
- Wallis, A., B. Sallato, M. Miranda Sazo. 2021. Honeycrisp Virtual Meet-up: Rootstocks. Jun 17 (virtual).
- B. Sallato, M. Miranda Sazo, and A. Wallis. 2021. Honeycrisp Virtual Meet-up: Nutrient Management. Jul 1 (virtual).
- Miranda Sazo, M., A. Wallis, and B. Sallato. 2021. Honeycrisp Virtual Meet-up: Harvest and Storage. Jul 15 (virtual).

Videos

Youtube video: <https://www.youtube.com/watch?v=N47sGkVgeqA&t=6s>

Webinars

- Coneva, E. 2020. First Season Yield of 'Cresthaven' Peach on Semi-Dwarf, Pest Resistant Rootstocks. Beginning Farmer webinar series of the Commercial Horticulture Team, Alabama Cooperative Extension System, Feb. 24
- Robinson, T.L. 2021. Opportunities for stone fruits for NY. Cornell Cooperative Extension Webinar. March 21, 2021. (Total of 100 people).
- Robinson, T.L. 2021. Blossom thinning in 2021. Cornell Cooperative Extension Webinar. May 3, 2021. (Total of 100 people).
- Robinson, T.L., L. Cheng, M. Miranda Sazo, C. Kahlke, and C. Watkins. 2021. Strategy for Managing Honeycrisp in 2021. Cornell Cooperative Extension Webinar. July 13, 2021. (100 people).
- Robinson, T.L., M. Miranda Sazo and Kahlke, C. 2021. The Use of Plant Growth Regulators Near Harvest. Cornell Cooperative Extension Webinar. Aug. 11, 2021. (75 people).
- Bradshaw, T. Adding Tree Fruit to a Diversified Farm. Vermont Vegetable and Berry Grower Webinar Series. 12/9/2020.

Musacchi, S. Honeycrisp Virtual Meetup #1 - Crop Load Management Part 2 (Stefano Musacchi, 6/12/2021)
https://mediaspace.msu.edu/media/Honeycrisp+Virtual+Meetup+1+-+Crop+Load+Management+Part+2+%28Stefano+Musacchi%29/1_cwn2k793.

Fund leveraging

Coneva, E. 2020. Assessing Innovative Size Controlling Rootstocks for Enhanced Efficiency of Peach Production Systems. USDA-NIFA-ADAI SCBG. Awarded \$40,000.

Coneva, E. Assessing Size Controlling Rootstocks for Enhanced Efficiency of Peach Production Systems. Alabama Agricultural Experiment Station Production Agriculture Research Program Grants, Awarded \$50,000.

Coneva, E. 2020. Size Controlling Peach Rootstocks for Alabama. The Alabama Nut, Fruit and Vegetable Industries. Awarded \$5,000

Elkins, R. 2020. Rootstocks and orchard systems for European pears. California Pear Advisory Board (CPAB) and Pear Pest Management Research Fund (PPMRF). \$30,622.

Montanari, S., K. Baumgartner, P. Brown, J. Postman, S. Wada. 2018 (completed in 2020). Finding sources of resistance to *Armillaria mellea* within the *Pyrus* Germplasm Collection. CDFA Specialty Crop Block Grant. \$291,012.

Stover, J. 2020. Pear Genomics Research Network website support. CPAB. \$1500.

Wada, S. 2020. Maintenance and conservation of pear (*Pyrus*) germplasm. 2020. CPAB. \$19,760.

Minas, I. (PI), Grant, 'Sustainable peach orchard soil microbiome management to control replant disease' USDA/NIFA/Western SARE (2020): \$350,000 (PI). awarded: Mar, 2020, start: Sep 1, 2020, end: Aug 31, 2023).

Minas, I. (PI), Grant, 'Peach cold hardiness monitoring and management for improved grower frost control' Specialty Block Grants, Colorado Department of Agriculture (CDA) (2020): \$61,236 (PI). awarded: May, 2020, start: Jan 1, 2021, end: November 1, 2022).

Minas, I. (PI), Grant, 'New training systems and rootstocks to maximize Colorado cherry orchards productivity and fruit quality potential' Specialty Block Grants, Colorado Department of Agriculture (CDA) (2020): \$53,539 (PI). awarded: May, 2020, start: Jan 1, 2021, end: November 1, 2022).

Minas, I. (PI), Grant, 'Management strategies to maximize Colorado peach orchards productivity and fruit quality potential' Specialty Block Grants, Colorado Department of Agriculture (CDA) (2019): \$88,885 (PI). Awarded: May, 2019, start: Jan 1, 2020, end: November 1, 2021.

Chavez, D.J. 2021. Training systems trial in peach. GA Commodity Commission for Peaches. Funding: \$4,000.00

Chavez, D.J., T.G. Beckman, and J.X. Chaparro. 2021. Development of peach and nectarine cultivars for Georgia. Cultivar Development Research Program – UGARF – University of Georgia. Funding: \$16,000.00

Gasic, K., et al., D.J. Chavez. 2020-2024. Solutions to the Armillaria Root Rot Affecting the U.S. Stone Fruit Industry. USDA-SCRI. Total Funding: \$4,972,730.00. UGA Funding: \$223,243.00

Villanueva, Raul (PI), R. Bessin, Z. Vilorio, W. Dunwell 2019-2022. Developing Management Strategies Against Invasive Ambrosia Beetles Affecting Apples and Nurseries in Kentucky. Kentucky Specialty Crop Block Grant. About \$500 from this grant is being used to cover the cost of Ambrosia beetle research on trees that were previously a part of the 2010 NC-140 apple rootstock trial.

Warmund, M. and M. Kwasniewski. 2020-2021. Optimizing Cultivars and Processing for Hard Cider and Apple wines. MO Dept. of Agriculture \$33,398.

Orchard management systems for improved yield and fruit quality – Sponsored by NY Apple Research and Development Program (\$50,000).

Designer apple rootstocks – Sponsored by NY Farm Viability Institute. (\$90,000).

Miller, D and A. Kirk. \$5,000 Gift from Ohio Fruit Growers Marketing Association in support of NC-140 Hard Cider Rootstock trial.

Crassweller, R., J. Schupp. 2021. Rootstock and Cultivar Evaluations. State Horticultural Association of Pennsylvania \$16,547

Crassweller, R., D. Smith 2021. Third Generation Apple System Trials. State Horticultural Association of Pennsylvania \$10,500

Reighard, G. 2021. Guardian® rootstock seed sales revenue. South Carolina Foundation Seed. \$283,199.

Gasic, K., C. Saski, G. Reighard, G. Schnabel, J. C. Melgar, et al. “Solutions to the Armillaria root rot threat affecting the U.S. stone fruit industry”. USDA-SCRI Standard Research and Extension Grant 2020-02650. September 1, 2020 to August 31, 2024. \$4,972,73

Next Generation Support for Northeast Tree Fruit IPM Working Group. Northeast IPM Center. Apr 2021-Mar 2023. PD: T. Bradshaw, co-PIs Wallingford, A., Pinero, J., and J. van Zoeren. \$19,760

New England Cider Apple Program: Optimizing Production for High-Value Markets. Northeast SARE Research and Demonstration Grants Program. PD: T. Bradshaw; Co-PIs: J. Clements, C. Cooley, R. Moran, J. Pinero. September 2019 – August 2022. \$229,867

Evans, K. A. Dhingra and S.L.Teh. (2019-2022): Pear rootstock breeding. Fresh and Processed Pear Committee Research. Budget: 321,643.

The, s.L. and K. Evans. (2020-2021) Pyrus seed stratification. Northwest Nursery Improvement Institute. PI: Budget: \$9,070.

Wiepz, E. Wisconsin Cherry Board funding for maintenance of the 2020 NC140 Tart Cherry High Density Rootstock and Irrigation Trials. \$2,500

Moran, R. 2021-2023. Peach Variety Testing and Development for a Local Market. Specialty Crops Research Initiative Block Grant, Maine Dept. of Ag. Forestry and Conservation. \$52,402.

Einhorn, T. 2021 Optimizing tree quality for early orchard establishment, Michigan Apple Committee (MAC)- \$14,914.

Einhorn, T. 2021. Matching New Rootstock Traits (Dwarfing, Productivity, Disease Resistance) to Michigan Needs, Michigan State Horticulture Society- \$14,156.

Einhorn, T., Musacchi, S., Chang, Y., Galimba, K. 2021-2023. Field evaluation and propagation of novel cold hardy quince rootstocks, WTFRC-NW Pear, \$270,000.

Lang, G.A. and W. Shane. 2021-23. Orchard Innovations to Sustain Michigan Peach/Nectarine Industry Profitability. USDA-MDARD-SCBGP \$90,526.

Lang, G.A. and T. Einhorn. 2020-22. Implementation of Precision Decision Support Systems to Protect and Optimize Michigan Tree Fruit Production. USDA-MDARD-SCBGP \$99,119.

Einhorn, T. and G.A. Lang. 2019-21. Development of Precision Decision Support Systems to Protect and Optimize Michigan Tree Fruit Production. USDA-MDARD-SCBGP \$99,950.

Lang, G.A. 2021. Tart and Sweet Cherry Orchard Systems That Optimize Labor Efficiency, Production Consistency, and Fruit Quality. Michigan Cherry Committee. \$8,282.

Lang, G.A. 2021. Optimizing Planar Sweet Cherry Orchard Technologies and Efficiencies. International Fruit Tree Association. \$8,000.

Lang, G.A. and W. Shane. 2021. Advanced Peach/Nectarine Rootstocks and Orchard Systems. International Fruit Tree Association. \$6,000.

Lang, G.A. 2021. Optimizing Future Stone Fruit Production Systems. Michigan State Horticultural Society. \$10,165.