SAES-422 Multistate Research Activity Accomplishments Report

Project No. NC 140 and Title: Improving Economic and Environmental Sustainability in Tree-Fruit Production Through Changes in Rootstock Use


Annual Meeting Dates: November 2-5, 2015, UC Davis, Davis, CA

2014-15 Published Written Works

Books


Refereed Journal Articles


**Symposium Proceedings**


**Poster Presentations**


Popular Articles


Cline, J., 2013. A Brief Summary of Selected Apple Research Projects Supported by the OAG and/or OMAFRA at the University of Guelph, Simcoe. Orchard Network 17(4):2-3


Miller, D.D. 2015. Apple Rootstock Trial Results in Ohio. Ohio Produce Growers and Marketers Association Quarterly 2015 (1)


Other Creative Works


7. Scientific and Outreach Oral Presentations.

Beckman, T.G. “Performance of MP-29 Rootstock in Grower Trials”. Presented at the SE Prof. Fruit Workers Meeting. Oct. 6-8, 2015, Montgomery, AL.


Chavez, D.J. and J. Cook. 2015. Effect of Progibb (gibberellic acid, GA3) and Retain (aminoethoxyvinylglycine, AVG) on peach varieties in middle Georgia. Presented at the SE Prof. Fruit Workers Meeting. Oct. 6-8, 2015, Montgomery, AL.


Cowgill, W. 2015. North Jersey Twilight Fruit Meeting, May, 07; Rutgers Snyder Farm, Pittstown, NJ 52 growers


Einhorn, T. 2015. Managing growth and development of sweet cherry. IV International Seminar on Cherries, Curico, Chile, October 20, 2015. Oral presentation of my research results to members of the Chilean tree fruit industry. Meeting hosted by Patricio Espinosa, PEC.

Einhorn, T. 2015. MCAREC Field Day- Pear horticultural research. Hood River, OR, July 21, 2015. Oral presentation of my research results to members of the Oregon and WA tree fruit industry. Meeting hosted by MCAREC.

Einhorn, T. 2015. Using rootstocks, cultivars, training systems, root pruning and PGRs to achieve early production in pear. 2015 Hood River Winter Horticulture Meeting, Hood River, OR, February 6, 2015. Oral presentation to members of the regional fruit industry. Meeting hosted by Steve Castagnoli, Hood River County Extension.


Einhorn, T. 2015. OSU Horticultural Update. 72nd Annual Cherry Institute, Yakima, WA, January 16, 2015. Oral presentation of research results to several hundred industry members, and regional peers.


Lang, G.A. 2015. Impose Your Own Climate Change: Different Covering Strategies Affect Stone Fruit Growth, Yield, Fruit Quality, and Diseases, SW Hort Days, Benton Harbor, MI; Feb 5.


Lang, G. 2015. Pruning High Density Sweet Cherries, MSUE Cherry Crop Load Management & Pruning workshop, Traverse City, MI, Apr. 23.


Parker, M.L. January 2015. Peach Production Orchard Tour and Workshop with an emphasis on peach rootstocks and subsequent management. Attendance 55.


Schupp, J. R. 2015. Pruning by the Numbers. The Mid-Atlantic Fruit and Vegetable Convention, Hershey, PA. January 27.


Schupp, J. R. 2015. Effect of water quality on Stop Drop Efficacy. Adams County Fruit Growers Winter Fruit School, Biglerville, PA. 16 February


Walsh, C. 2015. Preliminary Results from the Gala, Pink Lady Geneva Rootstock Trial at WMREC

Walsh, C. 2015. Field-testing advanced selections from the Geneva apple rootstock breeding program 2014 Updates.

Walsh, C. 2015. Anna Wallis, Brian Butler and Chris Walsh (Attendance, 60).

Walsh, C. 2015. Western Maryland Twilight Meeting. August 2015

Walsh, C, B. Butler, K. Peter. 2015 Tour of ongoing fruit tree research. (Attence, 70 from MD, PA, VA and WV)


8. Fund Leveraging, specifically, collaborative grants between stations and members.

NC-140 members have written research proposals and attracted extramural funding associated or directly related to the five objectives of this project from local, regional, national and international funding sources. For fiscal year 2014/2015, funding and matching funds reported by members amounted to $3,701,088 from primarily commodity groups, state and competitive grant sources.

Hampson, C. 2015. Costs of supporting the 2010 NC-140 apple rootstock trial and one independent rootstock trial AAFC BC Growers $2,000.00

Nielsen, D. 2015. Costs of supporting the 2010 NC-140 cherry rootstock trial Ag Food Can $2,000.00
Cochran, D. 2015. Optimizing the Cropping Potential and Profitability of Organic and Sustainable Apple Orchards Through the Use of Dwarfing Rootstocks Iowa Dept Ag $12,700.00

Fallahi, E. 2015. Evaluation of leaf minerals and fruit quality attributes of mature ‘Aztec’ Fuji trees on different rootstocks, tree girdling, and canopy designs ID Dept Ag $53,500.00

Fallahi, E. 2015. Selection for suitable rootstocks to improve yield, growth and fruit quality attributes and leaf minerals of ‘Aztec’ Fuji apples. ID Dept Ag, $50,500.00

Fallahi, E. 2015. Pest and disease control of rootstock projects. Wilbur Ellis. $4,000.00

Fallahi, E. 2015. Labor and equipment (in-kind) from Idaho fruit industry for operation of various apple rootstock projects. Idaho Fruit Industry. $5,800.00

Fallahi, E. 2015. New cold storage facilities for fruit research Univ Idaho $800,000.00

Hirst, P. 2015. Support tree fruit research Ostermeyer Endowment $15,000.00

Hirst, P.M., R.E. Foster and J. Beckerman 2015 Return Bloom Fund contributions to support tree fruit research Indiana Horticultural Society $5,000.00

Wolfe, D. 2013-2015. New peach/nectarine cultivar planting Cumberland Valley Nursery $1,000.00

Wolfe, D. 2009-2015. Apricot, peach, nectarine cultivar planting Gardens Alive $15,000.00


Lang, G. 2015 Competitive Orchards 2020: Integrating Tree Fruit Cropping Physiology, Canopy Architectures, Climate Modification Technologies, and Pest Management Strategies Project GREEEN $37,500.00


Lang, G. 2015 Sweet Cherry Orchard Designs. Mich Cherry Com Mich Cherry Comm $10,000.00

Lang, G. 2015 Trellised Protected Orchard Systems IFTA $8,000.00

Lang, G. 2015 Fruiting Wall Orchard Systems for Stone Fruits IFTA $4,000.00

Lang, G. 2015 Fruiting wall and high tunnel stone fruit production MSHS $7,892.00


Lang, G. 2015 In-kind use of apple rootstock plot Al-Mar Orchards, Flushing $2,500.00

Lang, G. 2015 Electronic pruners Peach Ridge Orchard Supply $3,500.00

Lang, G. 2015 In-kind use of apple rootstock plot Rasch Orchards $2,500.00
Parker, M. 2013-2015 Developing Management Strategies for Tree Fruit NCDA&CS Specialty Crop Block Grant $84,000.00

Parker, M. 2014. Apple Rootstock Evaluations. NC Apple Growers Association. $5,700.00

Parker, M. 2015. Support of apple research NC Legislature/Special Bill funding for apple research $11,930.00

Cowgill, W. 2015 NC 140 rootstock research NJ Horticultural Society $4,500.00

Cowgill, W. 2015 Rootstock and other plots maintenance NJ Ag Industry Support- dollars and in kind total $22,000.00

Shengrui Yao, Heyduck, R. and Guldan, S. 2014-2017. Organic apple high density planting in New Mexico, NM Specialty Block Grant $27,242.00

Forge, T, Neilsen, D, Wiersma, P, Blatt, S, Song, J, Forney, C, Burgher-MacLellan, K, Kalmokoff, M and Cline, J. 2015-2018. Developing more resilient tree fruit production systems from the ground up: rootstocks with enhanced tolerance to emerging biotic threats to orchard health AAFC $518,000.00

Miller, D.D. 2015. Fruit research support Ohio Apple Marketing Program $10,000.00

Cline, J and J. Zandstra. 2014. Rootstock research support Canadian Horticultural Council $30,000.00

Gibeaut, D., T. Einhorn and L. Long 2015. New programs to increase sweet cherry fruit size and improve harvest quality. Wash Tree Fruit Research Com and Oregon Sweet Cherry Com. $117,973.00

Einhorn, T. 2015. Improving fruit set, production efficiency and profitability of pears. NW Pear Bureau and Fresh Pear Research Committee $41,885.00

Whiting, M., T. Einhorn, and I. Hanrahan. 2015. Effect of near-harvest irrigation on fruit quality Washington Tree Fruit Research Com and Oregon Sweet Cherry Com $45,833.00


Autio, W., R. Marini, T. Robinson, G. Reighard, G. Lang, and T. Einhorn. 2015. NC-140 Rootstock Research Trial Coordination International Fruit Tree Association $20,000.00

Crassweller, R. M. & D. E. Smith. 2015. Apple rootstocks and cultivar evaluations State Horticultural Association of Pennsylvania Research Committee. $8,123.00

Crassweller, R. M. & D. E. Smith. 2015. Second generation apple system trials State Horticultural Association of Pennsylvania Research Committee $9,000.00

Crassweller, R. M. 2015. Extending carbohydrate model to PA growers for determining apple tree response to chemical thinners State Horticultural Association of Pennsylvania Research Committee $2,569.00

Crassweller, R. M. & D. E. Smith. 2015. Nutritional analysis of new apple cultivars in high density plantings. State Horticultural Association of Pennsylvania Extension Committee $1,702.00
Crassweller, R., and J. Schupp. 2015. Rootstock and cultivar evaluations State Horticultural Association of Pennsylvania Research Committee $12,799.00

Kon, T.M. and J.R. Schupp. 2015. A novel blossom thinning approach for apple: quantifying thermal transfer and damage to non-target tissues. State Horticultural Association of Pennsylvania Research Committee. $14,095.00


Krawczyk, G., K. Peter and J. Schupp. 2015. Effect of exclusion netting on integrated pest and disease management and fruit quality of apples. State Horticultural Association of Pennsylvania Research Committee $19,554.00

Schupp, J. 2015. Testing mechanical and hand artificial spur extinction for Cropload management of apple State Horticultural Association of Pennsylvania Research Committee. $9,487.00

Schupp, J. and T. Baugher. 2015. Cropload and fruit nutrient studies in commercial Honeycrisp orchards to determine best practices for minimizing bitter pit. State Horticultural Association of Pennsylvania Research Committee. $10,100.00

Reighard, G. 2015. Guardian® seed sales South Carolina Foundation Seed $173,000.00

Reighard, G. 2015. Screening peach rootstocks for adaptability, productivity, and tolerance to Armillaria and bacterial canker. South Carolina Peach Council research grant. $4,000.00

Robinson, T. and B. Black. 2015. Rootstock interactions and their effect on graft union break strength of apple. International Fruit Tree Association $10,000.00

Black, B. and G. Fazio. 2015. A Comparison of Water Relations Among Fruit Tree Rootstocks Utah Ag. Experiment Station Grant $17,946.00

Black, B. 2015. A Comparison of Water Relations and WUE Among Fruit Tree Rootstocks Utah Dept. Ag. & Food, Specialty Crop Block Grant $31,029.00


Peck, G.M. and K.S. Yoder. 2014-2016. Advancing Organic Apple Production in Virginia VA Department of Agriculture and Consumer Services-Specialty Crop Block Grant $38,166.00


Peck, G.M. 2014-2015. NC-140 rootstock trial for Central Virginia Virginia Apple Research Program $6,265.00
Virginia Apple Research Program $8,000.00

Virginia Agricultural Council. $9,500.00


Virginia Apple Research Program. $6,000.00


Musacchi, S., Kate Evans and Karen Lewis. 2013. Rootstock and systems trial  
Washington Tree Fruit Research Commission  $58,594.00

Washington Tree Fruit Research Commission. $133,495.00

Evans, K. and Amit Dhingra. 2015-2018. Developing the foundation for U.S. pear rootstock breeding  
PNW Pear Bureau. $273,253.00