Fumiomi Takeda, Ph.D.

Research Horticulturist and Lead Scientist
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Education

Ph.D. Plant Physiology (Pomology), University of California, Davis, CA

M.S. Agriculture (Viticulture), California State University, Fresno, CA

B.S. Agricultural Science (Viticulture/Plant Science), California State University, Fresno, CA

Dr. Fumiomi Takeda is a Research Horticulturist (GS-15) at the Appalachian Fruit Research Station (AFRS), Kearneysville, WV. He is recognized internationally and nationally as an expert on small fruit production systems and blackberry and strawberry reproductive development processes. He serves as a Lead Scientist for the small fruit production system research project and is responsible for the scientific and administrative leadership of a project titled "Production Management Research for Berry Crops." He coordinates scientific activities, manages 5 extramural projects, evaluates and recommends to USDA-Agricultural Research Service (ARS) National Program Staff. He prepares annual reports, provides technical information and consultation pertaining to berry crops, both internal and external to ARS. He conceives, plans, and conducts research to insure the sustainability of the U.S. small fruit farmers. His research has led to better understanding of crop physiology and improved small fruit crop production systems, including mechanical harvesting of berry crops. He has given invited lectures in Mexico, Japan, Chile, Belgium, United Kingdom, Canada, and Portugal.

Employment

2007 – 2017	Research Horticulturist/Lead Scientist, USDA, ARS, Kearneysville, WV
1998 – 2006	Research Horticulturist, USDA, ARS, Kearneysville, WV
1992 – 1998	Research Horticulturist/Lead Scientist, USDA, ARS, Kearneysville, WV
1982 – 1992	Research Horticulturist, USDA, ARS, Kearneysville, WV
1980 – 1982	Assistant Professor, Florida A&M University, Tallahassee, FL
1975 – 1979	Graduate Research Assistant, University of California, Davis, CA
1973 – 1975	Lecturer, California State University, Fresno, CA

Accomplishments

Dr. Takeda has provided leadership in developing and conducting basic and applied research in the area of small fruit crop physiology and production management practices for berry growers in the United States and globally. His original research in small fruit biology is internationally recognized and has led to the development of fundamental and applied information and innovative and creative solutions to small fruit production. His research has led to international collaborations with scientists in Portugal, Chile, Japan, Norway, and Canada.

Dr. Takeda has been or is the principal investigator on four extramural grants from USDA NIFA SARE, SCRI, and SBIR programs and other grants from commodity groups. He works with colleagues at land-grant institutions and companies (total grants over $5 million) that deals with crop protection, mechanical harvesting, and plant biology. In 2012, Dr. Takeda obtained a grant ($129,000) from the U.S. Highbush Blueberry Council for improving machine harvest fruit quality.

Awards and Recognition

- 2016 Naturipe Blue Challenge, semi-finalist prize ($10,000)
- 2007 ARS Office of Technology Transfer Professional Development Grant
- 2009 Mid-Atlantic Federal Laboratory Consortium Award for superior technology transfer
- 2012 USDA Agricultural Research Service Superior Technology Transfer Award for a commercial RCA trellis and cane training systems for blackberries
- 2013 Federal Laboratory Consortium National Award for Excellence in Technology Transfer for developing and commercializing a RCA trellis and cane training systems for blackberry production. The acreage using this technology has now increased to nearly 400 acres across the eastern United States.
- Member of Fulbright Scholar Program - The J. William Fulbright Foreign Scholarship Board.
- 2013 Eastern Panhandle Federal Executive Association Distinguished Service Award for Manager.
- Member: Phi Kappa Phi Honor Society
- Member: Sigma Xi Scientific Research Honor Society

Professional Service Activities

- American Society for Horticultural Science (ASHS): Dr. Takeda has been a Chair of Working Groups on Mechanical Harvesting (1991, 2003 and 2004), and Small Fruit and Viticulture (2005).
- Organized four Workshops at ASHS annual conferences.
- Member of Fruit Publication Award and Research of Year Selection Committees (2008-2012).
- Co-chair of the 2007 North American Strawberry Symposium. Editor of the Proceedings of the 2007 North American Strawberry Symposium and Co-Editor of the 2011 North American Strawberry Symposium.
- American Pomological Society Shepard Award Committee (chair).
- North American Blueberry Council: Research and Extension member category.
- Editorial Boards: Journal of Berry Research, International Journal of Fruit Science, and four volumes of Acta Horticulturae. Ad-hoc Editor for HortScience and HortTechnology.
- Adjunct Professor in the Department of Biology (1994 to 2010), supervised 3 senior thesis projects

Publications (since 2010)

1. Takeda, F. et al. Applying new technologies to transform blueberry harvesting. Agronomy (in review). 2017
2. Janisiewicz, W., B. Nichols, F. Takeda, and W.M. Jurick, II. First occurrence of Monilinia fructicola causing postharvest decay of strawberries in the United States. Plant Disease (in review). 2017.
3. Zhang, M., C. Li, F. Takeda, S. Yang. Early detection of blueberry internal bruises using hyperspectral transmittance imaging. Trans. ASABE. (in review). 2017.
4. Yu, J., C. Li, and F. Takeda. Nondestructive detection and quantification of blueberry bruising using near-infrared (NIR) hyperspectral reflectance imaging. Scientific Reports 2016. DOI: 10.1038/srep35679
5. Janisiewicz, W., F. Takeda, B. Nichols, and D.M. Glenn. Use of low-dose UV-C irradiation to control powdery mildew caused by *Podosphaera aphanis* on strawberry plants. Can. J. Plant Pathology 38(4):430-439. 2016. http://dx.doi.org/10.1080/07060661.2016.1263807
6. Takeda, F. and D.M. Glenn. Susceptibility of blackberry flowers to freezing temperatures. European J. Horticultural Science. 81:115-121. 2016.
7. Janisiewicz, W.J., F. Takeda, D.M. Glenn, M.J. Camp, and W.M. Jurick, II. Dark period following UV-C treatment enhances killing of Botrytis cinerea conidia and controls gray mold of strawberries. Phytopathology 106:386-394. 2016
8. Takeda, F. and A. Rose. Winter pruning of 'Triple Crown' blackberry. Int. J. Fruit Science 15:281-289. 2015.
9. Takeda, F., G. Krewer, R. Barnes, J. Branstrator, B. Santos, and D.M. Glenn. Winter shading of blueberry plants in the southeastern United States. J. Amer. Pom. Soc. 69:16-25. 2015.
10. Nestby, R. and F. Takeda. Method to reduce low temperature stress (LTS) in red raspberry (*Rubus idaeus* L.). J. Berry Research 5:219-230. 2015.
11. Xu, R., F. Takeda, G. Krewer, and C. Li. Measure of mechanical impacts in commercial blueberry packing lines and potential damage to blueberry fruit. Postharvest Biology and Technology 110:103-113. 2015.
12. Yu, P., C. Li, F. Takeda, G. Krewer, G. Rains, and T. Hamrita. Measurement of mechanical impacts created by rotary, slapper, and sway blueberry mechanical harvesters. Computers and Electronics in Agriculture 101:84-92. 2014.
13. Yu, P., C. Li, F. Takeda, and G. Krewer. Visual bruise assessment and analysis of mechanical impact measurement in southern highbush blueberry. Applied Engineering in Agriculture 30:29-37. 2014.
14. Li, C., P. Yu, F. Takeda, and G. Krewer. Using Smart Berry to understand impacts created by mechanical blueberry harvesters. HortTechnology 23:425-429. 2013.
15. Takeda, F., G. Krewer, C. Li, D. MacLean, and J.W. Olmstead. Techniques for increasing machine-harvest efficiency in blueberries. HortTechnology 23:430-436. 2013.
16. Rowland, L.J., E.L. Ogden, F. Takeda, D.M. Glenn, and M. K. Ehlenfeldt. Variation among highbush blueberry cultivars for frost tolerance of open flowers. HortScience 48:692-695. 2013.
17. Takeda, F., D.M. Glenn, and T. Tworkoski. Rotating cross-arm trellis technology for blackberry production. Journal of Berry Research 3(1):25-40. 2013.
18. Yu, P., C. Li, F. Takeda, G. Krewer, G. Rains, and T. Hamrita. Quantitative evaluation of a rotary blueberry mechanical harvester using a miniature instrumented sphere. Computers and Electronics in Agriculture 88:25-31. 2012.
19. Takeda, F. and J. Phillips. Horizontal cane orientation and rowcover application improve winter survival and yield of trailing 'Siskiyou' blackberry. HortTechnology 21:170-175. 2011.
20. Takeda, F., T. Tworkoski, C.E. Finn, and C. Boyd. Blackberry propagation by non-leafy floricane cuttings. 21:236-239. HortTechnology. 2011
21. Takeda, F. and J. Soria. Method for producing long-cane blackberry plants. HortTechnology 21:563-568. 2011.
22. Takeda, F., D. M. Glenn, A. Callahan, J. Slovin, and G.W. Stutte. Delaying flowering in short-day strawberry transplants with photoselective nets. Int. J. Fruit Science 10:134-142. 2010.

Patents and inventions

1. Takeda, F. U.S. Patent Number 8,827,578 B1. Process for the off-season production of blackberries. Issued on 11 December 2012.
2. Takeda, F. U.S. Patent Number 9,357,716 B1. Method and apparatus for primocane management.

Listed as an inventor on 2 patent applications submitted to USPTO in 2014 and 2015.