

## ***CURRICULUM VITAE***

**S. Kaan Kurtural, PhD**

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### **1) Research Interests**

- a) Vineyard, orchard and plantation systems mechanization for optimizing crop load, yield efficiency and sustainability
- b) Differential deficit irrigation scheduling based on phenological thresholds for flavor expression
- c) Investigation of low molecular weight phenolic composition of grape berry and wine by liquid chromatography as affected by the identified crop level and crop load thresholds.
- d) Fertilizer use efficiency of grapevine by rootstock, pruning system and irrigation stress
- e) Development of expert viticultural models to identify suitable sites to expand fruit plantings in continental climates using GIS technologies
- f) Design and application of whole canopy photosynthesis systems applicable to vineyards to measure water use efficiency and water foot print.

### **2) Extension**

- a) Conducting in-service training for extension personnel
- b) Working with producers, agribusiness organizations and state and federal agencies to promote sustainable production of high quality wine grapes
- c) Developing state wide viticulture program that assists commercial growers with variety selection, production practices and pest management
- d) Conducting workshops and field days and create publications on viticulture related materials aimed at state-wide grape growers
- e) Coordinating interdisciplinary team projects with growers, agribusiness representatives, and other extension faculty

### **3) Teaching**

- a) Graduate level:
  - i) Thesis VEN299 CSU-Fresno
  - ii) Graduate Seminar VEN229 CSU-Fresno
  - iii) Statistical analysis using SAS VEN 250 CSU-Fresno
  - iv) Multiple regression and statistical design VEN280 CSU-Fresno
  - v) Commercial Grape Growing PLS570 University of Kentucky
- b) Undergraduate level
  - i) Viticulture Physiology and Anatomy VIT101 CSU-Fresno
  - ii) Wine grape production VIT 106 CSU-Fresno
  - iii) Mechanized Viticulture VIT160 CSU-Fresno
  - iv) Cultivars and Rootstocks VIT165 CSU-Fresno
  - v) Canopy Management of Wine Grapes VIT162T CSU-Fresno
  - vi) Commercial Small Fruit Culture and Production PSGA 466 Southern Illinois University
  - vii) Plants and Society PLB 117 Southern Illinois University, Lecturer (2004)
  - viii) Fruit Production PSGA 436 Southern Illinois University, Grad. Teaching Assistant (1999)

- ix) Vines and Wines PLSS 333 Southern Illinois University, Grad. Teaching Assistant (1997-98)

#### 4) Experience Record

- a) Associate Professor, 05/2013 present California State University Fresno
- b) Assistant Professor:08/2008-05/2013 California State University Fresno
- c) Adjunct Assistant Professor-Extension Specialist for Viticulture: 05/2005-08/2008 University of Kentucky
- d) Graduate Research Fellow in Plant Stress Physiology: 08/2004-8/2005 Southern Illinois University
- e) Graduate Research Assistant in Viticulture: 01/2002-08/2004 Southern Illinois University
- f) Graduate Research Assistant in Pomology:09/1997-09/2000 Southern Illinois University

#### 5) College and University Services

- a) University Senator, California State University, Fresno (2010-2013)
- b) Department of Viticulture and Enology – Thomas Valdero Vineyard Redevelopment Committee Chair (2012)
- c) Fresno State Soccer Club – Faculty Advisor (since 2012)
- d) Department of Viticulture and Enology –Wine Grape Production Assistant Professor Search Committee Chair (2012, 2013, 2014)
- e) Department of Viticulture and Enology – Wine Chemist Assistant Professor Search Committee Chair (2012)
- f) Research and Scholarly Activities Committee, Member. College of Agricultural Sciences and Technology, California State University, Fresno (2008-2011).
- g) Harvey-Jordan Fellowship Committee, Member. College of Agricultural Sciences and Technology, California State University, Fresno (since 2008).
- h) Department of Viticulture and Enology Chairperson Search Committee (2009)

#### 6) Professional Activities and Services

- a) Reviewer for Journals (103 manuscripts reviewed since 2005): *Acta Horticultureae*, *Australian Journal of Grape and Wine Research*, *American Journal of Horticultural Science*, *American Journal of Enology and Viticulture*, *HortScience*, *HortTechnology*, *Scientia Horticultureae*, *Spanish Journal Of Agronomy*, *WeedTechnology*, *Weed Science*.
- b) Reviewer for Grants (43 grants reviewed since 2005): *American Vineyard Foundation*, *Commonwealth of Kentucky Department of Agriculture Tobacco Settlement Fund*, *Illinois C-FAR*, *Specialty Crop Block Grant Program*, *California Department of Food and Agriculture*, *USDA Specialty Crops Initiative*, *USDA-SARE Southern Region*, *Viticulture Consortium-East*, *Viticulture Consortium-West*.
- c) Moderator for Professional Meetings: *American Society for Horticultural Science (Viticulture and Small Fruits)*
- d) Organizing Committee for Professional Meetings: *International Warm Climate Viticulture Symposium*, *Current Trends in Vineyard Mechanization*, *Berry Sensory Workshop*, *January Pruning Workshops at Fresno State*, *Grape Day at Fresno State*,

## **7) Grantsmanship**

- a) American Vineyard Foundation 2013-2017. Interactive effects of rootstocks, training systems, and differential rdi on yield and fruit composition of Zinfandel. \$240,441
- b) American Vineyard Foundation 2013-2016. Timing of mechanical leaf removal and differential rdi on norisoprenoid development and methoxypyrazine catabolysis of a procumbent wine grape cultivar \$172,220
- c) American Vineyard Foundation 2013-2017. Whole canopy net photosynthetic response of procumbent wine grape cultivar to trellis system conversion and differential rdi. \$250,000.
- d) Agrothermal Solutions 2012. Efficacy of thermal treatments on wine composition of Pinot Noir, Cabernet Sauvignon and Malbec (2 years) \$ 103,400
- e) Agriculture Research Initiative 2012: Crop forcing for quality wine grape production. (3 years) \$263,000 (with Gu, and Kennedy)
- f) American Vineyard Foundation 2011. Interactive Effects of Mechanized Canopy Management and RDI on Shiraz (1 year): \$62,958
- g) Agriculture Research Initiative 2011. Achieving Vine Balance of Syrah with Mechanical Canopy Management and Regulated Deficit Irrigation (2 years) \$146,000.
- h) Agriculture Research Initiative 2011. Performance of Cabernet Sauvignon under Conventional and Mechanical Canopy Management (1 year) \$19,458
- i) CDFA, Specialty Crop Block Grant 2010 Area-wide mating disruption for vine mealybug in grapes. (3 years) \$459,413.
- j) Agricultural Research Initiative 2010 (with S. Gu). Crop forcing for quality wine grape production – unconventional means to produce cool climate fruit in warmer regions. (1 year) \$49,200.
- k) Agricultural Research Initiative 2010 (with A. Shrestha) Crop yield and economics of San Joaquin Valley vineyards under alternative weed management strategies (3 years): \$ 74,300
- l) Viticulture Consortium West 2010 (with A. Shrestha) Crop yield and economics of San Joaquin Valley vineyards under alternative weed management strategies (1 year): \$ 30,000
- m) American Vineyard Foundation 2010. Sustaining Bud Fruitfulness, Yield and Wine Composition of Pinot Grigio and Shiraz through Interactive Effects of Canopy Management in the southern San Joaquin Valley (1 year): \$59,458
- n) American Vineyard Foundation 2010. Interactive Effects of Mechanized Canopy Management and RDI on Shiraz (1 year): \$62,958
- o) American Vineyard Foundation 2009. Interactive Effects of Mechanize Canopy Management and RDI on Shiraz (1 year): \$40,725
- p) Agriculture Research Initiative 2009. Yield Monitoring of Wine Grapes 2009 (1 year): \$60,002.
- q) Oxbo-Korvan International 2009. Performance of Cabernet Sauvignon with Mechanized Canopy Management (1 year): \$12,097
- r) Suterra Inc. 2009. Application of Mating Disrupting Pheromones to Control Vine Mealy Bug (1 year) 38,000.

- s) USDA-SARE Southern Region 2008. Sustainable Management for Japanese and Green June Beetles in Vineyards (1 year): \$9,500.
- t) USDA-New Crop Opportunities Center 2007: Sustainable Management for Japanese and Green June Beetles Impacting Grape Production (1 year):\$ 25,000.00
- u) Kentucky Department of Agriculture 2007: Development and Improvement of Grape and Wine Industry to Benefit the Agricultural Economy of Kentucky (1 year): \$297,000.00
- v) USDA-Viticulture Consortium-East 2006: A Spatial Decision Support System to Select Suitable Vineyard Sites in North-Central Kentucky, Southern Ohio and Indiana (1 year) \$10,000.00
- w) Kentucky Department of Agriculture 2005: Evaluation of Interspecific Grape Cultivars, French cultivars, Training Systems and Rootstock/Interstem Combinations for Kentucky Climate and Soils (2 years) \$57,624.00
- x) Kentucky Grape and Wine Resources Council 2005. Mitigating Frost-Damage to Wine Grapes by Oil Application (2 years) \$65,200.00
- y) Kentucky Department of Agriculture 2005: Ameliorating Cropload of Traminette and Vidal blanc under Kentucky Climate (2 years) \$25,600.00
- z) Kentucky Department of Agriculture: A Spatial Decision Support System to Select Suitable Vineyard Sites in Western Kentucky and Southern Illinois (2 years) \$25,600.00
- aa) USDA-Viticulture Consortium-East: 2005 A Spatial Decision Support System to Select Suitable Vineyard Sites in North-Central Kentucky and Southern Ohio (1 year): \$5,647.00

#### **8) Fundraising/Unrestricted Gifts**

- a) Allied Grape Growers. 2012. \$5620
- b) Suterra Inc. 2012. Vine mealybug pheromone dispensers \$21,000.00
- c) Allied Grape Growers. 2012. \$3620
- d) E.&J. Gallo Analytical Laboratories 2012. Liquid chromatography and SPME gas chromatography. \$36,000.00
- e) E.&J. Gallo Analytical Laboratories 2011. Small lot wine making \$18,000.00
- f) E.&J. Gallo Analytical Laboratories 2011. Liquid chromatography and SPME gas chromatography \$36,000.00
- g) Suterra Inc. 2011. Vine mealybug pheromone puffers \$123,647.00
- h) Bronco Wine Company 2011. Small lot wine making \$78,376
- i) Bronco Wine Company 2010. Small lot wine making \$78,221
- j) Bronco Wine Company 2009. Small lot wine making \$54,300
- k) Suterra Inc. 2009. Vine mealybug pheromone dispensers \$62,500.
- l) Oxbo-Korvan International 2009. Interactive Effects of Mechanize Canopy Management and RDI on Shiraz (1 year): \$7370
- m) West Coast Grape Farming Inc. 2009. Interactive Effects of Mechanize Canopy Management and RDI on Shiraz (1 year): \$2340
- n) University of Kentucky Ag. Exp. Sta. 2007. Vineyard tractor with spray-ready cab \$40,000.00
- o) Kentucky Vineyard Society 2007. Unrestricted Gift to Viticulture Program \$2000.00
- p) University of Kentucky Ag. Exp. Sta. 2006. Research Activity Award \$5000.00
- q) University of Kentucky Ag. Exp. Sta. 2006. 2WD Ford F-150 (MY 1994) truck with tow package \$3500.00

- r) University of Kentucky, Pathology Dept. 2005. Waters HPLC System with manual injection \$16,000.00.
- s) University of Kentucky Ag. Expt. Sta. 2005. Low-profile, narrow gauge tractor \$16,000.00
- t) Lover's Leap Vineyards Inc. 2005. Rotary weed-control hoe \$400.00

## 9) Education

- a) PhD in Plant Biology, Physiology Specialization (2005) Southern Illinois University
- b) MSc in Pomology (2000) Southern Illinois University
- c) BSc in Field Crops and Business Management (1997) Southern Illinois University

## 10) Administration

- a) Dept. Viticulture and Enology Graduate Coordinator at CSU Fresno (2008-present)
  - i) Program re-instatement
  - ii) Curriculum development
  - iii) Admission criteria
  - iv) Recruitment plan
- b) Kentucky Governor's Office of Agricultural Policy, Vineyard Establishment Cost-share (2006-2008)
- c) Kentucky Grape and Wine Short course (2005-2008)
- d) Southern Illinois University, Department of Plant, Soil and Agricultural Systems (1997-2001) Horticulture Research Center-Assistant to Superintendent
  - i) Oversaw day-to-day operations of the 640 acre research station under the direction of the superintendent including horticultural spraying schedules, irrigation schedules including turf grass, vegetables, tree fruit crops, vineyards.
  - ii) Oversaw installation of irrigation systems including lining of retention pond, selecting bidder for pumping and filtration system, various booster pumps to deliver irrigation to research sites with 200 ft elevation difference.
  - iii) Prepared payroll for 20+ undergraduate assistants, temporary help and graduate assistants
  - iv) Reconciled various expenditures on research grant accounts

## 11) Professional Affiliations

- a) American Society of Enology and Viticulture since 1999
- b) American Society of Enology and Viticulture, Eastern Section 1999-2008
- c) American Society for Horticultural Science since 1997

## 11) Selected Extension Presentations

- a) Cook, M. and SK Kurtural. 2013. Update on mechanical leaf removal and regulated deficit irrigation for north-central San Joaquin Valley Fresno State
- b) Nelson, C and SK Kurtural. 2013. Interactive effects of crop load management and nitrogen fertility for southern San Joaquin Valley. Fresno State
- c) Kurtural, SK. 2013. Managing crop load in central and southern San Joaquin Valley vineyards. UCCE Fresno Co. 23 April 2013 Allied Grape Growers Mtg.
- d) Kurtural, SK. 2013. Sustaining bud fruitfulness of Pinot gris in a warm climate UC Davis Extension 21 February 2013

- e) Kurtural, S.K. 2013. UCCE Current approaches and advancements in vineyard mechanization. Cal. Plant and Soil Science Conference, 8 Feb 2013 Visalia, CA
- f) Kurtural, S.K. 2012. Pruning system and canopy management practice influence to affect yield and fruit composition of Syrah. Fresno Fruit, Raisin and Nut Expo 7 November 2012
- g) Kurtural, S.K. 2012. Mechanical canopy and crop load management of Pinot gris. Stanislaus County Tree and Vine Expo 13 November 2012
- h) Kurtural, S.K. 2012. Mechanical crop load management and RDI Affects Wine Composition of Syrah Central Coast Grape and Wine Expo 16 November 2012.
- i) Kurtural, S.K. 2012. Emerging trends in vineyard mechanization. Sustainable Ag Expo 12 November, Monterey, CA.
- j) Kurtural, S.K. 2012. Mechanical canopy and crop load management of Pinot gris in a warm climate. UCCE Stanislaus Co. Lodi Winegrape Comm. Lodi, CA
- k) Kurtural, S.K. 2012. Canopy management of wine grapes. What works and what doesn't. UCCE Shasta Co. Wine grape growers meetings. Redding, CA
- l) Kurtural, S.K. 2011. Bud fruitfulness of Pinot Grigio in southern SJV. UCCE San Joaquin Valley Winegrape Growers Ann. Mtg. Kingsburg, CA
- m) Kurtural, S.K. 2010. Interactive effects of mechanical canopy management and RDI on Syrah grapevines. UCCE San Joaquin Valley Winegrape Growers Ann. Mtg. Fresno, CA
- n) Kurtural, S.K. 2009. Effects of Conventional and Mechanical Canopy Management and RDI on Cabernet Sauvignon and Shiraz Grapevines. UCCE San Joaquin Valley Winegrape Growers Ann. Mtg. Fresno, CA
- o) Kurtural S.K. 2008. Airblast spray efficiency and benefits University of Kentucky Viticulture Field Day 9 June 2008.
- p) Basic production, economics and marketing information for wine grapes. In-service Training for Ag.Nat. Res. And County Agents. Madison Co. CES Office. 22 October 2007.
- q) Canopy management in small vineyards. University of Kentucky Viticulture Field Day 7 July 2007
- r) French-American hybrid and vinifera clones for the Kentucky Climate. University of Kentucky Viticulture Field Day 7 July 2007
- s) Best Management Practices for Kentucky Vineyards:
  - i) Series of 11 on-farm workshops/demonstrations for Canopy Management in Western, Central, and Northern Kentucky Vineyards for the 2007 Growing Season supported by the CES and Kentucky Vineyard Society
- t) Best Management Practices for Kentucky Vineyards:
  - i) Series of 5 on-farm workshops/demonstrations for Canopy Management in Western, Central and Northern Kentucky Vineyards for the 2006 Growing Season supported by the CES and Kentucky Vineyard Society
- u) Basics of dormant pruning for wine grapes. University of Kentucky CES Pruning Workshop I. 28 January 2006.
- v) Training young grapevines. University of Kentucky CES. Pruning Workshop I. 28 January 2006.
- w) Cultivar trial updates and research progress at the University of Kentucky. Kentucky Grape and Wine Short Course 11 January 2006.
- x) Overview of the cost-share program for commercial vineyard in Kentucky. Kentucky Grape and Wine Short Course 11 January 2006.

- y) Production budgets for wine and table grapes in Kentucky. Kentucky Grape and Wine Short Course 11 January 2006.
- z) Production Budgets for Juice and Wine Grapes in Kentucky, Kentucky Vineyard Society Fall Meeting 22 October 2005
- aa) Site Selection for Vineyards in Kentucky, Kentucky Vineyard Society Field Day 17 September 2005
- bb) Site Preparation, Cultivar Selection and Vineyard Design, Kentucky Vineyard Society Fall Field Day, 17 September 2005
- cc) Growing Grapes in Kentucky, University of Kentucky Research and Education Center Field Day in Princeton, 28 July 2005
- dd) Deer and Bird Control in Vineyards, Kentucky Vineyard Society/UK Summer Vineyard Workshop 17 July 2005
- ee) Growing Season Mineral Nutrition in Young Vineyards, Kentucky Vineyard Society/UK Summer Vineyard Workshop 11 July 2005
- ff) Training and Caring for Young Vines in Northern Kentucky 11 July 2005
- gg) Canopy Management in French-American hybrids in Kentucky, Kentucky Vineyard Society / UK Summer Viticulture Field Day 18 June 2005
- hh) Crop Estimation in Vineyards, Kentucky Vineyard Society / UK Summer Viticulture Field Day 18 June 2005
- ii) Growing Grapes in the Eden Shale, Eden Shale Research Farm 50<sup>th</sup> Anniv. College of Agriculture Field Day, 16 June 2005
- jj) Vineyard Pruning Demonstration Kentucky Vineyard Society UK Horticulture South Farm 12 March 2005
- kk) Wine Grape Growers Short Course 7-14 March 2005 Owen County, Kentucky
- ll) Grape Pruning Short Course 24 March 2005 Owen County, Kentucky
- mm) Grape Pruning Lecture and Short Course 21 March 2005 UK Princeton Education and Research Center
- nn) Training Pruning and Managing Wine Grapes 3 January 2005 UK Annual Fruit and Vegetable Trade Show, Lexington, KY
- oo) Mineral Nutrition of Vineyards 3 January 2005 UK Annual Fruit and Vegetable Trade Show, Lexington, KY
- pp) Managing Cropload for the Upcoming Season 3 January 2005 UK Annual Fruit and Vegetable Trade Show, Lexington, KY
- qq) Managing Cropload of French-American hybrids in northern Illinois 12 April 2004 SIUC-UIUC/IGGVA Spring Workshop, Galena, IL
- rr) Managing Cropload of French-American hybrids in central Illinois 11 April 2004 SIUC-UIUC/IGGVA Spring Workshop, Barry, IL
- ss) Managing Cropload of French-American hybrids in southern Illinois 7 April 2004 SIUC-UIUC/IGGVA Spring Workshop, Carbondale, IL
- tt) Pruning and Cluster thinning Affects Yield and Cold Hardiness of Chambourcin 27-28 February 2004 Springfield, IL Illinois Grape Growers and Vintners Association Annual Mtg.
- uu) Cold hardiness of grapevines in Illinois as affected by cultural practices 25-26 February 2003, Springfield, IL Illinois Grape Growers and Vintners Association Annual Mtg.

## 12) Selected Presentations/Published Abstracts

- a) SK Kurtural, LF Wessner and G. Dervishian. 2014. Vegetative compensation response of a procumbent grapevine cultivar under mechanical crop load management . 2014. 65<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Austin, TX
- b) SK Kurtural, JA Kennedy 2014. Biosynthesis of flavonoids is mitigated by cluster light exposure, not plant water stress. 2014 Annual Amer. Soc. Hort. Sci. Mtg. Orlando, FL.
- c) M Cook, Y Zhang, JA Kennedy and SK Kurtural. 2014. Impact of leaf removal timing and irrigation method on partial extraction of anthocyanins. 65<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Austin, TX
- d) M Cook, Y Zhang, JA Kennedy, and SK Kurtural 2014. Leaf removal timing and method of irrigation affect accumulation of phenolic compounds in seed and skin of red wine grape cultivar. 65<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Austin, TX
- e) C Nelson and SK Kurtural 2014. Comparison of Freedom and Salt Creek rootstock under timing and severity of irrigation stress in warm climate. 2014. 65<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Austin, TX
- f) Pruning systems and irrigation reduction severity affect yield efficiency of Zinfandel in warm climate. 2014. 65<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Austin, TX
- g) C Nelson and SK Kurtural 2014. Supplemental nitrogen application interacts with pruning system to affect yield and phenolic composition of Zinfandel in warm climate. 65<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Austin, TX
- h) SK Kurtural, G. Dervishian and RL Wample. 2013. Mechanical crop load management options to reduce labor costs in Cabernet Sauvignon production. 2013 Annual Amer. Soc. Hort. Sci. Mtg. Palm Desert, CA
- i) SK Kurtural and JP Geller 2013. Mechanical crop load management of wine grapes in warm climates. 2013 Annual Amer. Soc. Hort. Sci. Mtg. Palm Desert, CA
- j) SK Kurtural and LF Wessner 2013. Pruning systems and canopy management interact on yield and fruit composition of Syrah. 64<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA
- k) SK Kurtural and G. Dervishian. 2013. Mechanical canopy management reduces labor costs and maintains fruit composition of Cabernet Sauvignon grapevine production. 64<sup>th</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA
- l) Anil Shrestha, S.Kaan Kurtural and S. Konduru. 2013. Weed control options in organic vineyards. Western Soc. Weed Science. 58<sup>th</sup> Ann. Mtg. San Diego, CA
- m) Joseph P. Geller and S.K. Kurtural 2012. Mechanical crop load management of Pinot gris grapevines. 63<sup>rd</sup> Mtg. Amer. Soc. Enol. Viticult. Portland, OR
- n) David Langone, K.M. Daane and S.K. Kurtural 2012. Efficacy of vine mealy bug mating disruption using aerosol assisted delivery. 63<sup>rd</sup> Mtg. Amer. Soc. Enol. Viticult. Portland, OR
- o) Sean Pinnell and S.K. Kurtural 2012. Influence of mechanical canopy manipulation and differential RDI stress on phenolic composition of Syrah wines. 63<sup>rd</sup> Mtg. Amer. Soc. Enol. Viticult. Portland, OR.
- p) A. Shrestha, S.K. Kurtural and M.W. Fidelibus. 2012. Weed management comparisons in organic vineyards: Economics and Efficiency 63<sup>rd</sup> Mtg. Amer. Soc. Enol. Viticult. Portland, OR
- q) Kent M. Daane, S. Kaan Kurtural, S. Welter, and M. Cooper. 2011. Comparative effectiveness of various mating disruption technologies for vine mealybug management



in vineyards. 2011 Annual Entomological Society of America Meeting 13-16 November 2011.

- r) S. Kaan Kurtural 2011. Integrating canopy management for Pinot gris. 2011 ASHS Annual Conference Waikoloa, HI
- s) S. Kaan Kurtural 2011. Interactive effects of mechanical canopy management and regulated deficit irrigation on Syrah 2011 ASHS Annual Conference. Waikoloa, HI
- t) Dave B. Terry and S. Kaan Kurtural 2011. Achieving vine balance of Syrah with mechanical canopy management and regulated deficit irrigation. 62<sup>nd</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA
- u) Joseph P Geller, and S. Kaan Kurtural 2011. Vine balance assessment of Pinot Grigio in the southern San Joaquin Valley of California. 62<sup>nd</sup> Mtg. Amer. Soc. Enol. Viticult. 62<sup>nd</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA.
- v) Lydia F. Wessner and S. Kaan Kurtural 2011. Rejuvenating Syrah grapevines with training and canopy management. 62<sup>nd</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA.
- w) Lydia F. Wessner and S. Kaan Kurtural 2011. Integrating steps of canopy management for Syrah grapevines in the San Joaquin Valley. 62<sup>nd</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA.
- x) Lydia F. Wessner and S. Kaan Kurtural 2011. Vine balance assessment of mechanically managed canopies in the southern San Joaquin Valley. 62<sup>nd</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA.
- y) Joseph P. Geller, and S. Kaan Kurtural 2011. Interactive effects of canopy management on Pinot Grigio grapevines. 62<sup>nd</sup> Mtg. Amer. Soc. Enol. Viticult. Monterey, CA.
- z) Shrestha, A., Marcelo L. Moretti, Fernando Baesso, S. Kaan Kurtural, Geoffrey Dervishian, and Matthew Fidelibus. 2010. Weed Management in organic orchards and vineyards in the San Joaquin Valley of California. ASA-CSSA and SSSA Annual Mtg. Oct 31-Nov 3. Long Beach, CA
- aa) Wilson, Patsy E., D. Archbold, and S. Kaan Kurtural. 2010. Cultural practices to improve primary bud cold hardiness of Vidal blanc grapevines in the continental climate. 2010 Ann. Amer. Soc. Hort. Soc. 2-5 August 2010 Palm Springs, CA
- bb) Martinez, Marc-Antony, R. Wample and S. Kaan Kurtural. 2010 Performance of Cabernet Sauvignon under Conventional and Mechanical Canopy Management. 7<sup>th</sup> International Cool Climate Symposium.
- cc) Terry, Dave, B, G. Dervishian and S. Kaan Kurtural. 2010. Interactive effects of crop load and regulated deficit irrigation on Shiraz grapevines. 61<sup>st</sup> ASEV Annual Mtg. Seattle, WA. 7<sup>th</sup> International Cool Climate Symposium Seattle, WA
- dd) Terry, Dave, B, and S. Kurtural 2010. On-site measurements to assess vine balance of mechanically managed grapevine canopies in the San Joaquin Valley. 61<sup>st</sup> ASEV Annual Mtg. Seattle, WA
- ee) Terry, Dave, B., G. Dervishian and S. Kaan Kurtural. 2010. Interactive effects of canopy management and regulated deficit irrigation on Shiraz Grapevines. 61<sup>st</sup> ASEV Annual Mtg. Seattle, WA
- ff) Kurtural, S.K. and R.L. Wample 2009. Effects of Conventional and Mechanical Canopy Management of Performance of Cabernet Sauvignon. 60<sup>th</sup> ASEV Annual Mtg. Napa, CA.
- gg) Hammons, DL. and S.K. Kurtural 2009. Phenological resistance of grapes to green June Beetle 60<sup>th</sup> ASEV Annual Mtg. Napa, CA.
- hh) Kurtural, S.K. 2009. The Five-Steps of Canopy Management in the SJV, Fresno, CA

- ii) C.J. Smigell, J. Strang, S.K. Kurtural. 2008. 33<sup>rd</sup> ASEV/ES Annual Conference and Symposium Program 12-14 July 2008 St. Catharines Ontario, Canada
- jj) S.B. O'Daniel, S.K. Kurtural. 2008. Effect of Pruning Severity on Microclimate, Yield Components and Crop Load of Traminette. 33<sup>rd</sup> ASEV/ES Annual Conference and Symposium Program 12-14 July 2008 St. Catharines Ontario, Canada
- kk) P.E. Wilson, D.A. Archbold, S.K. Kurtural. 2008. Effects of Pruning Severity and Cluster Thinning on Vigor, Yield, Fruit Composition and Crop Load of Vidal Blanc Grapevines. 33<sup>rd</sup> ASEV/ES Annual Conference and Symposium Program 12-14 July 2008 St. Catharines Ontario, Canada
- ll) Kurtural, S.K. 2008. Mechanical Management of Grapevine Canopies in the SJV. Lodi Grape Expo. Lodi, CA.
- mm) Hammons, D. K. , S. K. Kurtural and D. A. Potter 2007. Impact of Japanese beetle defoliation on young grapevines. 32<sup>nd</sup> ASEV/ES Annual Conference and Symposium Program 10-12 July, King of Prussia, PA USA
- nn) P.E. Wilson, D. A. Archbold, T.H. Cottrell and S. K. Kurtural. 2007. Effect of crop load, vigor, yield, and wine phenolics of Vidal blanc grapevines. 2nd Int. Symp. On Human Health and Effects of Fruits and Vegetables ISHS 9-13 Oct. 2007. Houston, TX USA
- oo) S. K. Kurtural and I. E. Dami. 2007. Geographic Information Systems Assist with Site Selection of Vineyards in Midwestern United States. 2007 Ann. ASHS Conf. Scottsdale, AZ USA
- pp) S. Gu., K. Pomper and S. K. Kurtural 2007. Effect of stilet oil on bud break delay of wine grapes. 2007. Ann. ASHS Conf. Scottsdale, AZ USA
- qq) Hammons, D.L. S.K. Kurtural, & D.A. Potter. 2007. Impact of Japanese beetle defoliation on young grapevines. Entomological Society of America 55<sup>th</sup> Annual Mtg. San Diego, CA USA
- rr) Hammons, D.L. , S. K. Kurtural and D.A. Potter. 2006. Green June Beetle and Japanese Beetle Feeding interactions in Grapes. Entomological Society of America 54<sup>th</sup> Annual Mtg. Indianapolis, IN USA
- ss) J. Masabni, S. Kaan Kurtural, D. Wolfe and C. Smigell. 2006. Effect of Cropload on Eastern European Grapevine Cultivars. 27-30 July 2006 ASHS Ann. Conf. New Orleans, LA USA
- tt) S. Kaan Kurtural and Imed E. Dami. 2006. Effect of experimental year and soil pH on vigor, dry matter partitioning and mineral nutrient uptake of Norton grapevines. 9-11 July 2006 31<sup>st</sup> ASEV/ES Annual Conference and Symposium, Rochester, NY USA
- uu) S. Kaan Kurtural and Imed E Dami. 2006 Effect of pruning and cluster thinning on crop load, periderm browning, cold hardiness and fruit composition of Chambourcin in the Continental Climate. 6-10 February 2006. 6<sup>th</sup> International Cool Climate Symposium on Viticulture and Enology, Christchurch, New Zealand.
- vv) S. Kaan Kurtural, Imed E. Dami and B.H. Taylor. 2005 A Vineyard Site Assessment Model for Southern Illinois Using Geographic Information Systems. 30<sup>th</sup> ASEV/ES Annual Conference and Symposium Program 13-16 July, St. Louis, MO, USA
- ww) S. Kaan Kurtural, Imed E. Dami and B.H. Taylor. 2004. Balanced Cropping of Chambourcin in the lower Midwest Environment. II 29<sup>th</sup> ASEV/ES Annual Conference and Symposium Program 14-16 July 2004
- xx) Imed E. Dami. D.C. Ferree, S.K. Kurtural and B.H. Taylor. 2004. Influence of cropload on Chambourcin yield, fruit quality, and winter hardiness under Midwestern United

- States condition. 7<sup>th</sup> International Symposium on Grapevine Physiology and Biotechnology. 21-25 June Davis, California.
- yy) S. Kaan Kurtural, Imed E. Dami, B.H. Taylor and S.E. Ebbs. 2004. Open-top chamber for measuring whole-vine photosynthesis in the vineyard. 55<sup>th</sup> ASEV Annual Meeting. 30 June-2 July 2004
- zz) S. Kaan Kurtural, Imed E. Dami and B.H. Taylor 2003. Balanced cropping of Chambourcin in the lower Midwest Environment. I. 28<sup>th</sup> ASEV/ES Annual Conference and Symposium 9-11 July 2003
- aaa) Imed E. Dami, S.K.Kurtural, M. Babadoost, and R. Weinzierl. 2003. Integrated Disease and Insect Management Programs for Norton Grapevines in the Midwest. 54<sup>th</sup> ASEV Annual Meeting 18-20 June 2003
- bbb) S. Kaan Kurtural and Bradley H. Taylor 2002. Effects of root pruning and supplemental irrigation on net carbon exchange, transpiration and water relations of peach. 26<sup>th</sup> International Horticulture Congress Toronto, Canada
- ccc) S. Alan Walters, S.Kaan Kurtural, B.H. Taylor and J. Swenson. 2001. Watermelon Mosaic Virus Infection of Susceptible and Resistant Yellow Squash and Related Effects on Net Photosynthesis. American Society for Horticultural Science Annual Mtg. Sacramento, Calif.
- ddd) S. Kaan Kurtural and Bradley H. Taylor. 2000. Growth, yield and whole canopy photosynthesis of peach to timing of root pruning and irrigation. 7<sup>th</sup> International Symposium of Orchard and Plantation Systems. Nelson, New Zealand.
- eee) Taylor, B.H., Moonga, G.H., Kurtural, S.K. and Geisler-Taylor, D. 2000. Interstem/rootstock combinations influence stem and leaf characteristics of spurs and extension shoot of Ruby Jon Apple. 7<sup>th</sup> International Symposium of Orchard and Plantation Systems. Nelson, New Zealand

### **13) Invited Industry/Out-of-State Presentations**

- a) Managing wine grapes under extended drought. Illinois Grape Growers and Vintner's Association Ann. Mtg. 1-2 Feb 2013. Springfield, IL
- b) Farming for flavor and phenolics. Allied Grape Growers/Constellation Brands Grower Education Series. 2013. Fresno, CA
- c) Achieving Vine Balance with Mechanized Canopy Management and Deficit Irrigation 2011. Constellation Wines US Ann. Technical Conference, May 11. Shell Beach, CA
- d) Training Wine Grapes on Single Canopy Trellising Systems. 2010. Bronco Wine Company July 7. Minturn, CA
- e) Interactive Effects of Mechanical Canopy Management and Regulated Deficit Irrigation on Shiraz Grapevines 2010. American Vineyard Foundation Research Road Show June 18, Fresno, CA
- f) Mineral Nutrition of Wine Grapes. 2010. Bronco Wine Company May 16, Farmington, CA
- g) Overview of Research and Outreach Programs and Bronco Wine Co. Labs at CSU Fresno, 2010. E.J. Gallo Wine Co. Modesto, CA March 2010. Canopy Management of Winegrapes. 2010. Unified Symposium Sacramento, CA
- h) Vine Mealybug Update. 2009 Allied Grape Growers Thompson Growers Symposium Kerman, CA
- i) Interactive Effects of Mechanized Canopy Management and Timing of RDI Stress on

- Grapevines. 2009. American Vineyard Foundation Board Mtg. Napa, CA
- j) Current approaches to site selection using GIS Technologies. 2007. Wineries Unlimited, King of Prussia, PA
  - k) Mesoclimate site selection using GIS Technologies. 2007. Site Selection Workshop Ohio Agr. Res. Dev. Cent., Wooster, OH
  - l) Harvest Parameters and Ripening in Wine Grapes. 2006. Ill. Grape Growers and Vintners Assoc. Summer Mtg. Carbondale, IL
  - m) Canopy Management in Divided Canopies. 2005. Ill. Grape Growers and Vintners Assoc. Summer Mtg. Carbondale, IL.

#### 14) Peer Reviewed Publications

- a) Kurtural, SK, Y. Zhang, S. Pinnell, and NK Dokoozlian. 2014. Mechanical crop load management and regulated deficit irrigation alter vegetative aroma and phenolic composition of a procumbent grapevine (*Vitis vinifera* L.) in climate. HortScience (in review)
- b) P. Wilson and SK Kurtural. 2014. Balanced cropping of Vidal blanc (*Vitis* spp.) improves primary bud cold hardiness and maintains yield and berry composition in warm climate. HortScience (in press).
- c) Kurtural, SK, LF Wessner and G Dervishian. 2013. Vegetative Compensation Response of a Procumbent Grapevine (*Vitis vinifera* L.) Cultivar in Response to Mechanical Canopy Management HortScience 43:1-8 (cover page article)
- d) Shrestha, A., S. Kaan Kurtural, M. W. Fidelibus, G. Dervishian, and S. Konduru. 2013. Efficiency and cost-effectiveness of cultivators, steam, or an organic herbicide in weed control and vine productivity in organic vineyards in the San Joaquin Valley. HortTechnology 23:99-108 (cover page article)
- e) Geller, JP and SK Kurtural 2013. Mechanical canopy and crop load of Pinot gris in a warm climate. Amer. J. Enol. Vitic. 64:65-73
- f) Wessner, LF and SK Kurtural 2013. Pruning systems and canopy management interact on yield and wine composition of Syrah. Amer. J. Enol. Vitic. 64:134-138.
- g) Kurtural, SK, G. Dervishian and R.L. Wample. 2012. Mechanical canopy management maintains yield and reduces labor operation costs of Cabernet Sauvignon grape production. HortTechnology 22(4): 509-516
- h) O'Daniel, B., D. Archbold and SK Kurtural. 2012. Balanced pruning formula for Traminette (*Vitis spp.*) under Warm Climates Amer. J. Enol. Viticult. 63: 284-290.
- i) Terry, DB, and SK, Kurtural, 2011. Achieving vine balance of Syrah with mechanical canopy management and regulated deficit irrigation. Amer. J. Enol. Viticult. 62: 427-436
- j) Hammons, DL., SK Kurtural, DA Potter. 2010. Impact of insecticide manipulated defoliation by Japanese beetle on grapevines from vineyard establishment through production. Pest Management Science. 66(5): 565-571.
- k) Hammons, DL., SK Kurtural, DA Potter. 2010. Japanese beetle defoliation reduces primary bud cold hardiness during vineyard establishment. Amer. J. Enol. Viticult. 61: 130-134.
- l) Hammons, DL., SK Kurtural, DA Potter. 2010. Phenological resistance of grapes to the green June beetle, an obligate fruit-eating scarab. Annals of Applied Biology 156: 271-279.
- m) Hammons, D.L., S.K. Kurtural, M. Newman, D.A. Potter. 2009. Invasive scarab facilitates yeast mediated host location behavior of a native fruit-feeding scarab

- pest of grapes. Proc. Nat. Acad. Sci. (USA). 106:3686-3691
- n) Hammons, D. L., S. K. Kurtural & D. A. Potter. 2008. Japanese beetles facilitate feeding by green June beetles on ripening grapes. Environ. Entomol. 37:608-614.
  - o) S. Kaan Kurtural, I.E. Dami and D.C. Fiacchino. 2008. Mapping grape growing regions for Kentucky. Univ. Ken. Ag. Expt. Sta. 2005 Fruit and Vegetable Crops Research Report 521:22-23.
  - p) P.E. Wilson, S.B. O'Daniel, and S.K. Kurtural. 2008. Effects of pruning and cluster thinning on canopy microclimate, yield and fruit composition of Vidal blanc grapevines Univ., Ken. Ag. Expt. Sta. 2006 Fruit and Vegetable Crops Research Rpt. 538: 22-24.
  - q) S.B. O'Daniel, P.E. Wilson, and S. K. Kurtural. 2008. Effects of pruning and cluster thinning on yield and fruit composition of Traminette grapevines. Univ., Ken. Ag. Expt. Sta. 2006 Fruit and Vegetable Crops Research Rpt. 538: 25-27.
  - r) D.L. Hammons. S.K. Kurtural, and D.A. Potter. 2008. Evaluating host plant resistance and impact of Japanese beetle defoliation on young grapevines. Univ., Ken. Ag. Expt. Sta. 2006 Fruit and Vegetable Crops Research Rpt. 538:31.
  - s) P.E. Wilson, Y.A. Karatas and S. K. Kurtural 2008. Effects of Pruning and Cluster Thinning on Microclimate, Yield, and Fruit Composition of Vidal Blanc Grapevines Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt.555:26-28.
  - t) P.E. Wilson, D.A. Archbold and S. K. Kurtural 2008. Effect of pruning and cluster thinning on crop load and cold hardiness of Vidal blanc grapevines Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt.555:23-25
  - u) D. Hammons, S. K. Kurtural and D. Potter. 2008 Impact of Japanese beetle defoliation on overwintering ability of first year grapevines. Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt.555:35-36.
  - v) P.E. Wilson. T. H. Cottrell, D. A. Archbold and S. K. Kurtural. 2008. Effect of Crop Load on Vigor, Yield and Fruit Composition and Wine Phenolics of Vidal Blanc Grapevines. Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt.555:29-32
  - w) S. Kaan Kurtural, D. Wolfe, J. Masabni, S.B. O'Daniel, C. Smigell and Y.A. Karatas 2008. 2000 Wine grape cultivar trial. Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt.555:18-19.
  - x) Patsy Wilson, Erin Kunze, and S. K. Kurtural. 2008. A Comparison of Ectoparasitic Nematode Populations in American and French-American Hybrid Grapevines. Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt. 555:32-35.
  - y) S. Brandon O'Daniel, Patsy E. Wilson, Y.A. Karatas and S. Kaan Kurtural. 2008. Effect of pruning formula on yield and fruit composition of Traminette grapevines. Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt.555:21-22.
  - z) S. K. Kurtural, J. Strang, C. Smigell, Y.A. Karatas, P.E. Wilson and S.B. O'Daniel. 2008. Effect of Training Systems on Vine Size, Yield Components and Fruit Composition of European Grapevines. Univ., Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt. 555:18-20.
  - aa) S.K. Kurtural, J. Masabni. 2008. Kentucky viticultural regions and selected cultivars. Univ. Ken. Ag. Expt. Sta. 2007 Fruit and Vegetable Crops Research Rpt. 555:16-18.
  - bb) J.G. Strang, S.K.Kurtural, C. Smigell, S.B. O'Daniel, P.E. Wilson and E. Kunze. 2007. Vinifera grape training trial. Univ., Ken. Ag. Expt. Sta. 2006 Fruit and Vegetable Crops Research Rpt. 538: 36-37.

- cc) J. Strang, S. K. Kurtural, C. Smigell, A. Satanek and B. O'Daniel. 2006. Vinifera grape training trial. Univ. Ken. Ag. Expt. Sta. 2005 Fruit and Vegetable Crops Research Report 521: 31-33.
- dd) Joe Masabni, S. K. Kurtural, D. Wolfe, B. O'Daniel, C. Smigell, J. Johnston and H. Rogers. 2006. 2000 Wine grape cultivar trial. University of Ken. Ag. Expt. Sta. 2005. Fruit and Vegetable Crops Research Report 521: 24-25.
- ee) S. Kaan Kurtural, Imed E. Dami and B.H. Taylor. 2007. Utilizing GIS Technologies in Selection of Suitable Vineyard Sites. *Int. J. Fruit Science* 6(3): 87-107
- ff) S. Kaan Kurtural, Imed E. Dami and B.H. Taylor. 2006. Effects of pruning and cluster thinning on yield and fruit composition of Chambourcin grapevines. *HortTechnology* 16(2):233-240
- gg) S. A. Walters, S. Kaan Kurtural and B.H. Taylor. 2005. Influence of Watermelon Mosaic Virus on Net Photosynthesis, Yields and Farm Gate Revenues of Yellow Squash. *J. Vegetable Science*. 11 (4): 61-70
- hh) Imed E. Dami, D.C. Ferree, S.K. Kurtural and B.H. Taylor. 2005. Influence of cropload on Chambourcin yield, fruit quality, and winter hardiness under Midwestern United States conditions. *Acta Hort. (ISHS)* 689:203-208.
- ii) S.Kaan Kurtural and Taylor, B.H. 2004. Effects of root pruning and supplemental irrigation on net carbon exchange, transpiration and water relations of peach *Acta Hort. (ISHS)* 636:95-103
- jj) S.Kaan Kurtural and Taylor, B.H. 2001. Growth yield and whole canopy photosynthesis response of peach to timing of root pruning and irrigation. *Acta Hort. (ISHS)* 557:385-390
- kk) Bradley.H.Taylor, Moonga, G.H., Kurtural, S.K. and Geisler-Taylor, D. 2001. Interstem/rootstock combinations influence stem and leaf characteristics of spurs and extension shoot of Ruby John apple trees *Acta Hort. (ISHS)* 557:169-174.

#### **15) Prepared manuscripts (2014)**

- a) Kurtural, SK, C. Smigell, and J. Strang. 2014. Training systems and Production Efficiency of European and French-American Hybrid Cultivar in Warm Climate. *HortTechnology*.
- b) Langone, D, .K. Daane and SK Kurtural 2014. Area wide mating disruption of vine mealybug is assisted by pheromone placement in wine grapes. *Amer. J. Enol. Viticult.*
- c) Geller, JP, NK Dokoozlian, N Ebisuba and SK Kurtural 2014. Mechanical crop load management of Pinot gris affects odor activity values Pinot gris grown in warm climates. *Amer. J. Enol. Viticult.*

#### **16) Peer Reviewed Extension Publications**

- a) Midwest Commercial Small Fruit and Grape Spray Guide ID-94 (2005, 2006,2007,2008)
- b) Desired soil properties for vineyard site preparation (UK, HortFact 31-01)
- c) Vineyard Site Selection (UK, HortFact 31-02)
- d) Vineyard Design (UK, HortFact 31-03)
- e) Fertilization of Vineyards (UK, HortFact, 31-04)
- f) Acidification of Vineyard Soils (UK, HortFact, 31-05)
- g) Dormant Pruning of Wine Grapes (UK, HortFact, 31-07)
- h) Calibration of Airblast Sprayers (UK, HortFact, 31-10)
- i) Grape rootstocks for Kentucky vineyards (UK, HortFact, 31-13)
- j) Vineyard site preparation (UK, HortFact, 31,12)

- k) Crop estimation in vineyards (UK, CES HO-86)
- l) Kentucky Viticultural Regions and Selected Cultivars (UK, CES HO-87)
- m) Vineyard Site Selection Based on Climate and Soil Properties (UK, CES HO-88)

### **17) Edited Trade Publications**

- a) David Langone, S. Kaan Kurtural and Kent M Daane. 2014. Mating disruption of vine mealybug. Vines and Wine Spring 2014.
- b) Anil Shrestha, S. Kaan Kurtural and Matthew Fidelibus. 2013. Efficacy and Cost of Some Weed Management Practices in an Organic Winegrape Vineyard. Practical Winery and Vineyard Management. Spring 2014.
- c) Sean Pinnell and SK Kurtural 2012. Improving phenolic composition of Syrah. Practical Winery and Vineyard Management Spring 2012
- d) S. Kaan Kurtural, R. Wample and R. Smithyman. 2011. Differential harvesting in winegrape vineyards. Practical Winery and Vineyard Management Summer 2011
- e) S. Kaan Kurtural. 2011. Integrating steps in canopy management with mechanization. Practical Vineyard and Winery Management Spring 2011.
- f) S. Kaan Kurtural 2011. Mechanized canopy management: Fresno State trials show yield, quality, cost benefits. Vineyard and Winery Management April-May 2011.
- g) S. Kaan Kurtural 2010. Canopy management trials help restore winegrape harvest. California Agricultural Technology Institute Fall Update
- h) S. Kaan Kurtural 2010. Researchers look to improve wine grape quality without hurting yields. August 2010 Western Farm Press
- i) S. Kaan Kurtural 2009. Field research addresses vine mealybug infestation. California Agricultural Technology Institute Winter Update

### **18) Patents**

- a) Method for training grapevine plants. Patent pending with the U.S. Patent Office 1/6/2014
- b) Method for partial extraction low molecular weight phenolics from grape marc with high performance liquid chromatography. Patent pending with the U.S. Patent Office. 1/6/2014.

### **19) Book Chapters**

- a) Vineyard Mechanization 2014. In: Midwest Grape Production Guide. ed. Imed EDami. The Ohio State University Cooperative Extension Service. Bulletin 919