

## **MARK HOFFMANN**

Dr. rer. nat.; Dipl.-Biol.

**Small Fruits Extension Specialist  
Assistant Professor**

Contact:  
North Carolina State University  
Department of Horticultural Science

2721 Founders Drive (Kilgore Hall)  
Room 258  
Raleigh, 27695 NC

Cell.: +1 919 352 8006  
Office: +1 919 513 0772

email: mark.hoffmann@ncsu.edu  
mhoffma3@ncsu.edu

homepage: <http://smallfruits.cals.ncsu.edu>

Grower Information:

<https://strawberries.ces.ncsu.edu/>

<https://grapes.ces.ncsu.edu/>

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**APPOINTMENTS**


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Since July 2017	<b>Small Fruits Extension Specialist and Assistant Professor, North Carolina State University</b> , Department of Horticultural Sciences
2015 – 2017	<b>Post Doctoral Researcher, University of California Davis</b> , Department of Plant Sciences, USDA Research Station, Salinas, CA (PI: Steven Fennimore). <i>Soil-borne Pest and Weed Control and Soil Management in Strawberries with Steam and AITC</i>
2013 - 2014	<b>Post Doctoral Researcher, University of Florida</b> , Department of Nematology and Entomology, CREC, Lake Alfred, FL (PI: Kirsten Pelz-Stelinski). <i>Behavior of Diaphorina citri (Asian Citrus Psyllid) and possibilities of endosymbiotic vector control</i>
2010 - 2012	<b>Research Assistant, University of Geisenheim (Germany)</b> , Department of Grapevine Breeding, Geisenheim, Germany (PI: Ernst Ruehl). <i>Distribution and control of grape root rot (Roesleria subterranea) in Germany</i>

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**EDUCATION**


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2006 - 2011	<b>Dissertation Dr. rer. nat. (magna cum laude), University of Mainz (Germany)</b> , Department of Zoology <i>Development of a Field Method to Assess Root Parasites of Woody Plants - Ecological Analyzes of the Grapevine - Phylloxera Interaction</i> Advisors: Prof. Dr. Eisenbeis (Entomology), Dr. Lars Huber Other committee members: Prof. Dr. Foitzik (Ecology and Evolution) Prof. Dr. Rothe (Plant Physiology) Prof. Dr. Ruehl (Grapevine Breeding, University Geisenheim).
2006 - 2010	<b>Economic and Employment Law (3.0), University of Hagen (Germany)</b> (avocational), Department of Law
2002 – 2005	<b>Diploma Biologist (1.3), University of Mainz (Germany)</b> , Department of Zoology <i>In-vitro assessment of the antagonistic potential of Pantoea agglomerans related bacterium (PARB) and Roesleria subterranea against soil fungal flora</i> Advisors: Prof. Dr. Eisenbeis (Entomology), Dr. Lars Huber Exams: Zoology 1.3 (Prof. Dr. Eisenbeis) Geography 1.0 (Prof. Dr. Grunert) Botany 1.7 (Prof. Dr. Rothe)
1998 – 2000	<b>Undergraduate Biology (2.0), University of Mainz (Germany)</b>

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**PUBLICATIONS**

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**Peer-Reviewed:**

2017:

**Hoffmann, M.** and Fennimore, S.A. 2017: A Soil Probe System to Evaluate Weed Seed Survival in Soil Disinfestation Trials. *Weed Technology* (accepted).

**Hoffmann, M., Barbella, A.\***, Miller, T., Dorn, N., Greene, I., Rachuy, J., Koike, S., Martin, F., Goodhue, R., Broome, J. and Fennimore, S. 2017: Weed and Pathogen Control with Steam in California Strawberry Production. \*shared first authorship. *Acta Horticulturae* DOI: 10.17660/ActaHortic.2017.1156.88

2016:

Chu, C.C., Gill, T.A., **Hoffmann, M.**, Pelz-Stelinski, K.S. 2016: Inter-population variability of endosymbiont densities in the Asian citrus psyllid (*Diaphorina citri* Kuwayama). *Microbial Ecology* 71(4), 999-1007.

**Hoffmann, M.**, Ruehl, E.H., Eisenbeis, G. and Huber, L. 2016: The grape root as habitat: overwintering and population dynamics of grape phylloxera (*Daktulosphaira vitifoliae* Fitch) in temperate climate viticulture. *Australian Journal of Grape and Wine Research* 22(1), 271-278.

2015:

**Hoffmann, M.**, Ruehl, E.H., Eisenbeis, G. and Huber, L. 2015: Indications for rootstock related ecological preferences of grape phylloxera (*Daktulosphaira vitifoliae* Fitch). *Vitis* 54, 137-142.

**Martini, X., Hoffmann, M.\***, Coy, M.R., Stelinski, L.L. and Pelz-Stelinski, K.S. 2015: Infection of an Insect Vector with a Bacterial Plant Pathogen increases its Propensity for Dispersal.\* shared first authorship. *PLOS one* 10(6):e0129373.

2014:

**Hoffmann, M.**, Coy, M.R., Kingdom Gibbard, H.N. and Pelz-Stelinski, K.S. 2014. Spatial patterns of relative *Wolbachia* abundance in populations of the Asian Citrus Psyllid, *Diaphorina citri* (Hemiptera: Psyllidae). *Environmental Entomology* 43(5), 1215-1222.

Coy, M.R., **Hoffmann, M.**, Kingdom Gibbard, H.N., Kuhns, E., Pelz-Stelinski, K.S. and Stelinski, L.L. 2014. Nested-quantitative PCR approach with improved specificity for the detection of low titer levels of *Candidatus Liberibacter asiaticus* in the Asian Citrus Psyllid, *Diaphorina citri* (Kuwayama). *Journal of Microbial Methods* 102, 15-22.

Before 2014:

**Hoffmann, M.**, Ruehl, E.H., Huber, L., Kirchmair, M. and Eisenbeis, G. 2011. A scanner based method to assess and predict grape root infesting parasites in field. *Acta Horticulturae* 904, 101-110.

Kirchmair, M., Neuhauser, S., Strasser, H., Voloshchuk, N, **Hoffmann, M.** and Huber, L. 2009.

Biological Control of Grape Phylloxera – a historical review and future prospects. *Acta Horticulturae* 816, 13-17.

Huber, L., **Hoffmann, M.**, Ruehl, E.H. and Kirchmair, M. 2009. Disease suppressiveness of vineyard soils infested with Grape Phylloxera. *Acta Horticulturae* 816, 41-51.

Kirchmair, M., **Hoffmann, M.**, Neuhauser, S., and Huber, L. 2006. Persistence of GranMet®, a *Metarhizium anisopliae* based product, in grape phylloxera infested vineyards. In: Enkerli, J. (ed): *IOBC wprs Bulletin*. 30(7), 137-142.

**Scientific Conferences:** <sup>1</sup> = speaker

Fennimore, S.A.<sup>1</sup>, Wilen, C., **Hoffmann, M.**, Gerik, J., Martin, F. and Stanghellini, M. 2016: Integrated Soil Disinfestation Systems for Flower and Strawberry. 23rd Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reductions, 8-10 Nov. 2016, Orlando, FL.

**Hoffmann, M.**<sup>1</sup>, Barbella, A., Broome, J., Martin, F., Stanghellini, M., Asche, A., Vargas, G., Hodel, D., Goodhue, R., Ajwa, H. and Fennimore, S.A. 2016: Improvement and Integration of Field Scale Soil Pasteurization in California. 23rd Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reductions, 8-10 Nov. 2016, Orlando, FL.

**Hoffmann, M.**<sup>1</sup>, Barbella, A., Miller, T., Rachuy, J., Dorn, N., Greene, I., Broome, J., Martin, F., Koike, S., Goodhue, R. and Fennimore, S.A. 2016: Weed and Pathogen Control with Steam in California Strawberry. 8th International Strawberry Symposium, 13-17 Aug. 2016, Quebec City, Quebec, Canada.

**Hoffmann, M.**<sup>1</sup>, Miller, T., Rachuy, J., Dorn, N., Greene, I., Broome, J., Barbella, A., Goodhue, R. and Fennimore, S. 2015: Soil Disinfestation with Steam in California Strawberry Production. 22nd Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reductions, 8-11 Nov. 2015, San Diego, CA

Fennimore, S.A.<sup>1</sup>, Wilen, C., **Hoffmann, M.**, Gerik, J., Martin, F., Koike, S., Westerdahl, B. and Stanghellini, M. 2015: Fumigant & Non-fumigant Soil Disinfestation Systems for Flower & Strawberry. 22nd Annual International Research Conference on Methyl Bromide Alternatives and Emissions Reductions, 8-11 Nov. 2015, San Diego, CA

Martini, X.<sup>1</sup>, **Hoffmann, M.**, Pelz-Stelinski, K.S. and Stelinski, L.L. 2015: Color morph and infection with *Candidatus Liberibacter asiaticus* influence flight capability and dispersal of the Asian citrus psyllids. 4th International Conference on HLB, 9-13 Feb. 2015, Orlando, FL, USA

**Hoffmann, M.**, Russell, C.W., Coy, M. R., and Pelz-Stelinski, K.S.<sup>1</sup> 2015: Endosymbiotic control of the Asian Citrus Psyllid (ACP, *Diaphorina citri* (Hemiptera: Liviidae)): Diversity and Ecology of *Wolbachia* in Florida ACP populations. 4th International Conference on HLB, 9-13 Feb. 2015, Orlando, FL, USA

**Hoffmann, M.**<sup>1</sup>, Coy, M.R., Russell, C.W., Gmitter, K.A. and Pelz-Stelinski, K.S. 2014: Diversity and Dynamics of *Wolbachia* in populations of *Diaphorina citri* (Hemiptera: Liviidae) in Florida. 62nd Meeting of the Entomological Society of America, 12-16 Nov. 2014, Portland, OR, USA

**Hoffmann, M.**<sup>1</sup>, Ruehl, E.H., Eisenbeis, G. and Huber, L. 2014. Belowground population dynamics of

grape phylloxera (*Daktulosphaira vitifoliae* Fitch, Phylloxeridae) in cool climate viticulture. Poster Presentation. 62nd Meeting of the Entomological Society of America, 12-16 Nov 2014, Portland, OR, USA

**Hoffmann, M.**<sup>1</sup>, Coy, M.R., Kingdom Gibbard, H.N. and Pelz-Stelinski, K.S. 2013: Spatial and sex related patterns of Wolbachia infection in populations of the Asian Citrus Psyllid (*Diaphorina citri* Kuwayama), detected by qPCR. Poster Presentation. 61st Meeting of the Entomological Society of America, 9-14 Nov. 2013, Austin, TX, USA

Kingdom Gibbard, H.N.<sup>1</sup>, Martini, X., Gibbard, C., **Hoffmann, M.**, Stelinski, L. and Pelz-Stelinski, K.S. 2013: Hiding in plain sight: The overwintering reservoir groves of *Diaphorina citri* Kuwayama (Hemiptera: Psyllidae). 61st Meeting of the Entomological Society of America, 9-14 Nov. 2013, Austin, TX, USA

**Hoffmann, M.**<sup>1</sup>, Ruehl, E.H., Huber, L. and Eisenbeis, G. 2010. A Quantitative Assessment of Root System Infesting Grape Phylloxera Population in Field. 5th int. Phylloxera Symposium. 19-21. Sept 2010, Vienna, Austria

**Hoffmann, M.**<sup>1</sup>, Huber, L., Kirchmair, M., E. Ruehl and Eisenbeis, G. 2010: Assessment of small woody root feeding insects in field, a root scanner based approach using grape phylloxera (*Dactulosphaira vitifoliae* Fitch, Hemiptera) as model organism. Poster presentation, 5th int. Symposium on Physiological Processes in Roots of Woody Plants, 8-12. Aug 2010, Victoria BC, Canada

**Hoffmann, M.**<sup>1</sup>, Huber, L., Ruehl, E. and Eisenbeis, G. 2009. Seasonal distribution of root system parameters of grape rootstock 5C (*Vitis riparia* x *Vitis berlandieri*), regarding the grape phylloxera population in field. 20th national meeting: "Oekophysiologie des Wurzelraumes (root zone physiology)", 17-18. September 2009, Lutherstadt-Wittenberg, Germany

Kirchmair M.<sup>1</sup>, **Hoffmann M.**, Neuhauser S. and Huber, L. 2008. The influence of soil management strategies on soil mycobiota and on disease suppressiveness of vineyard soils. 12th int. Congress of Mycology, 5-9. August 2008, Istanbul, Turkey

Huber, L., **Hoffmann, M.**<sup>1</sup>, Ruehl, E.H. and Kirchmair, M. 2007. Disease suppressiveness of vineyard soils infested with Grape Phylloxera. 4th Int. Phylloxera Symposium, 20-21. Sept. 2007, Keszthely, Hungary

Kirchmair, M.<sup>1</sup>, Neuhauser, S., **Hoffmann, M.**, Strasser, H. and Huber, L. 2007. Biological Control of Grape Phylloxera, a historical review and future prospects. 4th int. Phylloxera Symposium, 20-21. Sept 2007, Keszthely, Hungary

### **Extension:**

#### **Publications:**

**Hoffmann, M.**, Ruehl, E.H. and Presser, C. 2012. Ein Leitfaden zur Identifikation von Wurzelschimmel (*Roesleria subterranea* (Weinm.) Redhead) in Ertragsanlagen. Deutsches Weinmagazin 9/2012:16-19. engl.: "Guidelines to identify grape root rot (*Roesleria subterranea* (Weinm.) Redhead) in vineyards" German Wine Magazine 9/2012:16-19.

**Hoffmann, M.** and Ruehl, E.H. 2010. Fragen zur Verbreitung des Wurzelschimmelerregers *Roesleria subterranea* (Weinm.) Redhead. Deutsches Weinmagazin 16/17/2010:43.  
 engl.: “Questions regarding the distribution of grape root rot *Roesleria subterranea* (Weinm.) Redhead”.  
*German Wine Magazine. 16-17/2010:43.*

Huber, L., Eisenbeis, G., **Hoffmann, M.**, Neuhauser, S., Porten, M. and Ruehl, E.H. 2006.  
 Absterberscheinungen und Kümmerwuchs verursacht durch den Wurzelschimmelerreger *Roesleria subterranea* (Weinm.) Redhead. Deutsches Weinmagazin. 03/2006:25-31.  
 engl.: “Dieback caused by grape root rot *Roesleria subterranea* (Weinm.) Redhead.” *German Wine Magazine.03/2006:25-31.*

Huber, L., Eisenbeis, G., **Hoffmann, M.**, Neuhauser, S., Porten, M. and Ruehl, E.H. 2006.  
 Wurzelschimmel, verborgene Gefahr im Untergrund. Die Winzer-Zeitschrift. April 2006:34-35.  
 engl.: “Grape root rot, belowground danger “ *Winegrower Journal. 04/06:34-35.*

Huber, L., Eisenbeis, G., **Hoffmann, M.**, Neuhauser, S., Porten, M. and Ruehl, E.H. 2006. Bekämpfung des Wurzelschimmels. Die Winzer-Zeitschrift. Mai 2006:35-37.  
 engl.: “Control of grape root rot”. *Winegrower Journal. 05/06:35-37.*

#### Book Chapters:

**Hoffmann, M.**, Huber, L. and Ruehl, E.H. 2013. Wurzelschimmel an Reben (*Roesleria subterranea* (Weinm.) Redhead) - Biologie, Vorkommen und mögliche Ursachen. Deutsches Weinbaujahrbuch 2012.  
 engl.: „Grape root rot (*Roesleria subterranea* (Weinm.) Redhead – Biology, Distribution and possible causes“ *Annals of German Viticulture 2012.*

**Hoffmann, M.**, Huber, L., Ruehl, E.H. and Eisenbeis, G. 2011. Morphologische Wurzelsystemparameter bei Unterlagsreben der Sorte 5C (*Vitis riparia* x *Vitis berlandieri*) unter Berücksichtigung der Reblauspopulation (*Daktulosphaira vitifoliae* Fitch) und der Bodentemperatur. Merbach, W., Ruppel, S. and Augustin, J. (eds.): Mitteilungen Agrarwissenschaften Bd.18:43-51.  
 engl.: “Morphological Root System Parameters of grape rootstocks 5C (*Vitis riparia* x *Vitis berlandieri*), considering grape phylloxera population (*Daktulosphaira vitifoliae* Fitch) and soil temperature. In: Merbach, W., Ruppel, S. and Augustin, J. (eds): *Notification of Agricultural Sciences. 2011. 18:43-51.*

#### Meetings: <sup>1</sup> = speaker

**Hoffmann, M.**<sup>1</sup> 2017: NCSU Grape and Muscadine Extension Program: Grape and Wine Summit, Greensboro, NC, 18<sup>th</sup> July 2017, Greensboro, NC.

**Hoffmann, M.**<sup>1</sup> (**Organizer**) and Fennimore, S.A. 2017: 2nd California Soil Management Meeting: Value of Agricultural Land. 2nd Feb. 2017, Salinas, CA.

**Hoffmann, M.**<sup>1</sup>, Rachuy, J., Ajwa, H. and Fennimore, S.A.<sup>1</sup> 2016: Evaluation of Steam and Dominus. Strawberry Field Day at the USDA Farm, 2nd June 2016, 1572 Old Stage Rd, Salinas, CA.

**Soil Management Meeting in Salinas, CA. 1st Soil Management Meeting, 5 Feb. 2016, Salinas, CA.**

**Hoffmann, M.**<sup>1</sup> (**Organizer**) and Fennimore, S.A. 2016: Introduction to the 1<sup>st</sup> Soil Management Meeting in Salinas. 1<sup>st</sup> Soil Management Meeting, 6<sup>th</sup> February 2016, Salinas, CA, USA

Fennimore, S.A.<sup>1</sup> and **Hoffmann, M.**<sup>1</sup> 2015: K-Pam and Dominus Drip Tape Application in Strawberries. Strawberry Field Day at the USDA Test Fields at Spence Rd, 28 May 2015, Salinas, CA, USA

**Hoffmann, M.**<sup>1</sup>, Ruehl, E.H. and Huber, L. 2011. Grape root rot (*Roesleria subterranea*) – Identification, Distribution and State of Research. 21st int. Conference of Wine Growing and Grafting. 21-23 July 2011, Geisenheim, Germany

Huber, L., Ruehl, E. and **Hoffmann, M.**<sup>1</sup> 2010. Absterbeerscheinungen von Reben in Ertragsanlagen durch Wurzelschimmel (*Roesleria subterranea*), Badischer Rebveredlertag, 19<sup>th</sup> February 2010, Breisach, Germany

engl.: “Grapevine dieback, caused by grape root rot (*Roesleria subterranea*)” National Conference of Grapevine Breeders, 19<sup>th</sup> February 2010, Breisach, Germany

Internet publications:

**Hoffmann, M.** 2011: Leitfaden zur Identifikation von Wurzelschimmel (*Roesleria subterranea*) in Ertragsanlagen.

engl.: „Guidelines to Identify Grape Root Rot (*Roesleria subterranea*) in Field“. 2011.

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## SUCCESSFUL FUNDING

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**Hoffmann, M.** and Fennimore, S.A. (PI) 2017: *Evaluation of fumigant alternatives to control Verticillium dahliae in soil – Greenhouse Trials*. NovaSource Inc. **\$ 34,000**

**Hoffmann, M.**, Koike, S. and Fennimore, S.A. (PI) **2016**: *Evaluation of fumigant alternatives to control Verticillium dahliae in soil – Confirmation of 2015 results*. NovaSource Inc: **\$ 7,500**

**Hoffmann, M.**, Goodhue, R.E. (PI), Martin, F.N. and Fennimore, S.A. (PI) **2015-2018**: *Production of Strawberry in Soils Disinfested With Enhanced Steam and Allyl Isothiocyanate*. USDA Methyl Bromide Transition USDA-NIFA 2015-51102-24144; **\$ 380,721**

**Hoffmann, M.** and Fennimore, S.A. (PI) **2015**: *Evaluation of fumigant alternatives to control Verticillium dahliae in soil*. NovaSource Inc: **\$ 5,000**

Huber, L. (PI), Eisenbeis, G (PI), Kirchmair, M., **Hoffmann, M.** and Ruehl, E.H. (PI) **2011-2012**: *Investigating control strategies for grape root rot (*Roesleria subterranea* Weinm. Redhaed)* Hessian Ministry of Agriculture Specialty Crops Grant; **€ 80,000**

**Hoffmann, M.** **2010**: – Travelling Grant of University of Mainz to attend the International Conference on Root Physiology in Victoria, BC. August 2010; **€ 1,000**

**Hoffmann, M.** **2008-2009**: *Developing a method to assess root infesting insects* – Fellowship of Rhineland Palatinate. **€ 19, 600**