

# RUSSELL L. GROVES

**TITLE** Vegetable Extension Specialist & Assistant Professor

Department of Entomology  
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**EDUCATION**

<u>INSTITUTION</u>	<u>DEGREE</u>	<u>MAJOR</u>	<u>DATE</u>
Iowa State University Ames, IA 50010	B.S.	Forestry	1989
University of Arkansas Fayetteville, AR, 72701	M.S.	Entomology	1992
N. C. State University Raleigh, NC 27695	Ph.D.	Entomology	2001

**PROFESSIONAL EXPERIENCE**

<u>TITLE</u>	<u>INSTITUTION</u>	<u>DATES</u>
Graduate Assistant	University of Arkansas	1989-92
Research Specialist	University of Arkansas	1992-96
Research Specialist	North Carolina State Univ.	1996-98
Graduate Assistant	North Carolina State Univ.	1998-2001
Research Associate	Cornell University	2001-2003
Adjunct Asst. Professor	University of Maine	2001-2003
Research Entomologist	USDA-ARS, SJVASC	2003-2006
Assistant Professor	University of Wisconsin	2006-Present

**SPECIALIZATION AND AREAS OF INTEREST**

Applied Entomology / Integrated Pest Management  
Plant - Pathogen – Vector Interactions  
Molecular Plant Diagnostics  
Insect-Pathogen Spatio-temporal Ecology

**PROFESSIONAL SOCIETIES**

Entomological Society of America  
American Phytopathological Society  
Gamma Sigma Delta National Honor Society  
Phi Kappa Phi National Honor Society

## **HONORS AND AWARDS**

Department of Forestry. 1985. Iowa State University, Freshman Scholar Award.

Member, Gamma Sigma Delta National Honor Society of Agriculture. 2001-Present.

Member, The National Honor Society of Phi Kappa Phi. 2000-Present.

John Henry Comstock Award Nomination. 2001. Entomological Society of America.

Kenneth R. Keller Outstanding Doctoral Research Award. 2001. College of Agriculture and Life Sciences, North Carolina State University, Raleigh, NC.

## **SERVICE**

### **DEPARTMENT / CRIS UNIT**

Museum Committee, University of Arkansas, (1990).

Entomology Graduate Student Assoc. (EGSA-V.P.), University of Arkansas, (1990).

EGSA Fund Raising Committee, University of Arkansas, (1990-92).

Mike Duke Seminar Committee, N.C. State University, (1999).

USDA / UCKAC, Brown Bag Lunch Seminar Series Coordinator, (2004-2006).

Extension and Applied Research Committee, University of Wisconsin (2006- Present).

### **UNIVERSITY / AGENCY**

Assistant Secretary, University of Arkansas Teaching Academy (1993-1995).

University of Arkansas Teaching Support Center; Development of Teaching Portfolio (1994).

ADODR, USDA-ARS, SJVASC, Parleir, CA. Specific Cooperative Research Agreement with Department of Entomology, University of California, Riverside (2003-2006).

### **STATE OR NATION**

S-260 Regional Riceland Project (1993-95).

Riceland Mosquito Management Program, USDA/CSRS (1992)

Strategic Wetland Mosquito Management Program, USDA/CSREES (1994-95).

GWSS Areawide Management Planning, Kern & Tulare Counties, CA (2003-Present).

Pierce's Disease Research Symposium, Program Organizer & Session Moderator, San Diego, CA (2004).

Pierce's Disease Research Symposium, Program Organizer, San Diego, CA (2006).

Frito Lay North America, Technical Advisory Board, University of Wisconsin, (2006-Present)

**TEACHING (assistant): (University of Arkansas, Department of Entomology)**

<u>Number</u>	<u>Title</u>	<u>Enrollment</u>	<u>Year</u>
Ento 1031L	Insects and People Lab.	29	Sp 93
Ento 1031L	Insects and People Lab.	37	Sp 94
Ento 1031L	Insects and People Lab.	45	Sp 95
Agri 2003	Pest Management	27	Sp 94
Agri 2003	Pest Management	124	Sp 95
Ento 2013L	Intro. to App. Ento Lab.	67	Fall 92
Ento 2013L	Intro. to App. Ento Lab.	64	Fall 93
Ento 2013L	Intro. to App. Ento Lab.	40	Fall 94
Ento 2013L	Intro. to App. Ento Lab.	51	Fall 95

**PUBLICATIONS**

- Groves, R. L.**, J. C. McAllister, C. L. Meek and M. V. Meisch. 1994. Evaluation of aerial and ground-applied adulticides against mosquito species in Arkansas and Louisiana. *J. Amer. Mosq. Control Assoc.* 10(3):407-412.
- Meisch, M. V., D. A. Dame, **R. L. Groves** and R. D. Nunez. 1994. Assessment of *Anopheles quadrimaculatus* response to permethrin and resmethrin by topical application. *J. Amer. Mosq. Control Assoc.* 10(3):437-439.
- Groves, R. L.**, and M. V. Meisch. 1995. Efficacy of a 1:1 and 1:5 mixture of technical permethrin and piperonyl butoxide against *Anopheles quadrimaculatus* and *Psorophora columbiae*. *J. Amer. Mosq. Control.* 11(3):311-314.
- Groves, R. L.**, and M. V. Meisch. 1996. Laboratory and field plot bioassay of *Bacillus sphaericus* against Arkansas mosquito species. *J. Amer. Mosq. Control.* 12(2):220-224.
- Groves, R. L.**, D. A. Dame, C. L. Meek and M. V. Meisch. 1997. Efficacy of three synthetic pyrethroids against three mosquito species in Arkansas and Louisiana. *J. Amer. Mosq. Control.* 13(2):184-188.
- Groves, R. L.**, G. G. Kennedy and J. F. Walgenbach. 1998. Inoculation of tomato spotted wilt virus into cotton. *Plant Dis.* 82:959.
- Groves, R. L.**, C. E. Sorenson, J. F. Walgenbach and G. G. Kennedy. 2001. Field and greenhouse assessment of imidacloprid to reduce the spread of tomato spotted wilt tospovirus in tomato, pepper and tobacco with electronic penetration graph techniques incorporated in laboratory investigations. *Crop Prot.* 20:439-445.
- Groves, R. L.**, J. F. Walgenbach, J. W. Moyer and G. G. Kennedy. 2001. Overwintering of *Frankliniella fusca* Hinds (Thysanoptera: Thripidae) on winter annual weeds infected with *Tomato spotted wilt virus* and patterns of movement of TSWV into susceptible hosts. *Phytopathology* 91:891-899.
- Faircloth, J. C., J. R. Bradley, Jr., J. W. Van Duyn, and **R. L. Groves**. 2001. Reproductive success and damage potential of tobacco thrips and western flower thrips on cotton seedlings in a greenhouse environment. *J. Agric. Urban Entomol.* 18:179-185.
- Groves, R. L.**, J. F. Walgenbach, J. W. Moyer and G. G. Kennedy. 2002. The role of weed hosts and tobacco thrips, *Frankliniella fusca*, in the epidemiology of *Tomato spotted wilt virus*. *Plant Dis.* 86:573-582.

11. **Groves, R. L.**, J. F. Walgenbach, J. W. Moyer and G. G. Kennedy. 2003. Seasonal dispersal patterns of *Frankliniella fusca* (Thysanoptera: Thripidae) and tomato spotted wilt virus occurrence in central and eastern North Carolina. *J. Econ. Entomol.* 96:1-11.
12. Nault, B. A., J. Speese III, D. Jolly and **R. L. Groves**. 2003. Seasonal patterns of adult thrips dispersal and implications for management in eastern Virginia tomato fields. *Crop Prot.* 22:505-512.
13. **Groves, R. L.**, J. I. Chen, E. L. Civerolo, M. W. Freeman, and M. A. Viveros. 2005. Spatial analysis of almond leaf scorch disease in the San Joaquin Valley of California: factors affecting pathogen distribution and spread. *Plant Dis.* 89:581-589.
14. Chen, J., **Groves, R.**, Civerolo, E.L., Viveros, M., Freeman, M., and Zheng, Y. 2005. Two *Xylella fastidiosa* genotypes associated with almond leaf scorch disease on the same location in California. *Phytopathology* 95:708-714.
15. Fournier, V., Hagler, J., Daane, K., **Groves, R.**, de Leon, J., Costa, H., and Henneberry, T. 2006. Monoclonal antibodies specific to glassy-winged and smoketree sharpshooter egg protein: diagnostic tools for predator gut analysis. *Biological Control* 37:108-118.
16. Chen, J., Groves, R.L., Zheng, Y., Civerolo, E., Viveros, M., and Freeman, M. 2006. Colony morphology of Almond Leaf Scorch strains of *Xylella fastidiosa* and its epidemiological application. *Euro. J. Plant Pathol.* (in press).
17. Chen, J., Groves, R.L., Zheng, Y., Civerolo, E., Viveros, M., and Freeman, M. 2006. "Surface translocation of *Xylella fastidiosa* on solid medium surfaces." Submitted for publication, June 2006, *J. Bacteriology*.

#### **OTHER PUBLICATIONS**

18. **Groves, R. L.** and J. I. Chen. 2003. Epidemiology of Pierce's Disease in the central San Joaquin Valley of California: factors affecting pathogen distribution and movement., pp.92-94 *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, S. Oswald, P. Blincoe, R. Spencer, L. Houser, A. Ba, and T. Esser (eds.), 8-11 December, California Department of Food and Agriculture, San Diego, CA.
19. Fournier, V. J. Hagler, K. Daane, J. de Leon, and **R. L. Groves**. 2004. Identifying key predators of the various glassy-winged sharpshooter lifestages, pp.103-105, *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, S. Oswald, P. Blincoe, R. Spencer, L. Houser, A. Ba, and T. Esser (eds.), 7-10 December, California Department of Food and Agriculture, San Diego, CA.
20. **Groves, R. L.** and J. I. Chen. 2004. Epidemiology of Pierce's Disease in the central San Joaquin Valley of California: factors affecting pathogen distribution and movement., pp.109-111, *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, S. Oswald, P. Blincoe, R. Spencer, L. Houser, A. Ba, and T. Esser (eds.), 7-10 December, California Department of Food and Agriculture, San Diego, CA.
22. Hagler, J., T. Henneberry, K. Daane, V. Fournier, and **R. Groves**. 2004. A novel immunological approach for quantifying predation rates on glassy-winged sharpshooter, pp.112-116, *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, S. Oswald, P. Blincoe, R. Spencer, L. Houser, A. Ba, and T. Esser (eds.), 7-10 December, California Department of Food and Agriculture, San Diego, CA.
22. Hagler, J., J. Blackmer, T. Henneberry, K. Daane, and **R. Groves**. 2004. Quantifying landscape-scale movement patterns of glassy-winged sharpshooter and its natural enemies using a novel mark-capture technique, pp.248-252, *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, S. Oswald, P. Blincoe, R. Spencer, L. Houser, A. Ba, and T. Esser (eds.), 7-10 December, California Department of Food and Agriculture, San Diego, CA.
23. Johnson, M., K. Daane, E. Backus, and **R. Groves**. 2004. Spatial population dynamics and overwintering biology of the glassy-winged sharpshooter, *Homalodisca coagulata*, in California's San

Joaquin Valley, pp.123-125, *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, S. Oswalt, P. Blincoe, R. Spencer, L. Houser, A. Ba, and T. Esser (eds.), 7-10 December, California Department of Food and Agriculture, San Diego, CA.

**24. Groves, R. L.**, J. I. Chen. 2004. Epidemiology of Almond Leaf Scorch Disease in the central San Joaquin Valley of California, *In Proceedings, 32<sup>nd</sup> Annual Almond Industry Conference*, 1-2 December, Almond Board of California, Modesto, CA.

**25. Groves, R.L.** 2005. Spatial analysis of Almond Leaf Scorch Disease: Implications for Secondary Spread of *Xylella fastidiosa*, *In Proceedings, 11<sup>th</sup> Annual California Geostatistics Symposium*, 23 May 2005 Bakersfield, CA.

**26. Groves, R. L.**, J. I. Chen. 2005, Epidemiology of Pierce's Disease in the central San Joaquin Valley of California: factors affecting pathogen distribution and movement. pp. 22-25. *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, P. Blincoe, M. Mochel, S. Oswalt, and T. Esser (eds.), 5-7 December, California Department of Food and Agriculture, San Diego, CA.

27. Groves, R.L., Johnson, M.W., Hagler, J., and Luck, R. 2005. Dispersal and movement of the glassy-winged sharpshooter and associated natural enemies in a continuous, deficit-irrigated agricultural landscape. pp. 105-108. *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, P. Blincoe, M. Mochel, S. Oswalt, and T. Esser (eds.), 5-7 December, California Department of Food and Agriculture, San Diego, CA.

28. Hagler, J., Blackmer, J., Henneberry, T., Groves, R., and Daane, K. 2005. Progress toward quantifying landscape-scale movement patterns of the glassy-winged sharpshooter and its natural enemies using a novel mark-capture technique. pp. 109-112, *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, P. Blincoe, M. Mochel, S. Oswalt, and T. Esser (eds.), 5-7 December, California Department of Food and Agriculture, San Diego, CA..

29. Johnson, M.,W., Daane, K., Groves, R., and Backus, E. 2005. Spatial population dynamics and overwintering biology of the glassy-winged sharpshooter in California's San Joaquin Valley. pp. 113-116, *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, P. Blincoe, M. Mochel, S. Oswalt, and T. Esser (eds.), 5-7 December, California Department of Food and Agriculture, San Diego, CA.

30. Hagler, J., Henneberry, T., Groves, R., Fournier, V., Daane, K., and Johnson, M. 2005. Progress toward developing a novel immunological approach for quantifying predation rates on the glassy-winged sharpshooter. pp. 321-324. *In Proceedings, Pierce's Disease Research Symposium*, M. Tariq, P. Blincoe, M. Mochel, S. Oswalt, and T. Esser (eds.), 5-7 December, California Department of Food and Agriculture, San Diego, CA.

31. Groves, R.L., and Chen, J. Epidemiology of Almond Leaf Scorch Disease in the Central San Joaquin Valley of California." pp. 2-5, *In Proceedings, 33<sup>rd</sup> Annual Almond Industry Conference*, 7-9 December, Almond Board of California, Modesto, CA.

#### **PRESENTATIONS AT SCIENTIFIC MEETINGS:**

Entomological Society of America (ESA). (1990- Present). Attended 10 National Meetings, 5 regional branch meetings and authored 24 oral and poster presentations.

American Phytopathological Society of America (APS). (2003-Present). Attended 5 National Meetings and authored 8 oral and poster presentations which resulted in abstracts in published proceedings.

Pierce's Disease Research Symposium. (2002-Present). Attended 4 meetings and authored 9 poster presentations.

Almond Industry Conference. (2003-Present). Attended 2 conferences and presented 2 oral presentations and 5 poster presentations which resulted in abstracts in published proceedings.

Tobacco Workers Conference. (1998-99). Attended 2 conferences and presented oral presentations which resulted in abstracts in published proceedings.

Roundtable Conference on Tomato Spotted Wilt Virus in Tobacco (1998). Attended the conference and presented an oral report of results.

American Mosquito Control Association (AMCA). (1993-96). Attended 2 National Meetings and authored 2 oral presentations.

Louisiana Mosquito Control Association (LMCA). (1994-96). Attended 2 regional meetings and presented 2 oral presentations.

Texas Mosquito Control Association (TMCA). (1995). Attended 1 regional meeting and presented 1 oral presentation.

Texas Forest Entomology Seminar. (1990-1991). Attended 2 regional meetings and presented oral presentations at both seminars.

Roundtable Conference on Tomato Spotted Wilt Virus in Tobacco, 1996, Raleigh, NC. Insect transmission and associated vectors.

Tobacco Day, 1997, Raleigh, NC. Overwintering sites and sources of tobacco thrips and TSWV spread into tobacco.

Retreat on Tomato Spotted Wilt Virus, 1997, Raleigh, NC. Admire<sup>®</sup>, prospects for control of TSWV. Overwintering sources of TSWV and its thrips vectors in North Carolina.

USDA ARS Field Day, 2001, Presque Isle, ME. The reemergence of PVY threatens the profitability of seed potato production (09/13/2001).

### **INVITED PRESENTATIONS**

Groves, R. L. 1998. Lincoln Memorial Seminar. *Overwintering biology of Tomato spotted wilt virus and its vector, Frankliniella fusca, in winter annual weeds*. University of Arkansas, Fayetteville, AR. Invited speaker.

Groves, R. L. 2001. *Non-crop hosts of tomato spotted wilt tospovirus and its principal insect vectors in North Carolina*. North Carolina State University, Raleigh, NC. Invited departmental seminar speaker.

Groves, R. L. 2001. *The role of weed hosts and thrips vectors in the epidemiology of Tomato spotted wilt tospovirus*. Texas A&M University, College Station, TX. Invited seminar speaker.

Groves, R. L. 2002. *North Carolina Tospoviruses and Maine Potyviruses*. University of Georgia, Athens, GA. Invited seminar speaker.

Groves, R. L., Kennedy, G. G., and Walgenbach, J. W. 2002. *Epidemiological importance of weeds in the Tomato spotted wilt virus pathosystem and implications for managing the disease*. ESA National Meeting. Ft. Lauderdale, FL. Invited symposia speaker.

Gray, S., Groves, R., and Perry, K. 2002. *Tuber necrosis viruses: emerging threat-manageable problem?* National Potato Council Seed Seminar. Portland, ME. Invited symposia speaker.

- Groves, R. L. 2004. *Epidemiology of Almond Leaf Scorch Disease in the Central San Joaquin Valley of California: Factors Affecting Pathogen Distribution and Dispersal*. University of California, Davis, CA. Invited departmental seminar speaker.
- Groves, R.L. 2004. *Spatial and Temporal Patterns of Insect Movement: Implications for Disease Spread*. California State University, Fresno, Plant Science Department. Invited departmental lecture.
- Groves, R. L. 2004. *Almond Leaf Scorch Disease*. Pacific Nut Producers, Almond Exposition. Ripon, CA. Invited speaker.
- Groves, R. L., and Chen, J. 2005. *Spatio-temporal Analysis of ALS: Implications for Secondary Spread of ALS*. Geospatial Technologies in Agriculture, Bakersfield, CA. Invited symposium speaker.
- Groves, R. L. 2005. *Probable Vectors of Almond leaf Scorch Disease, Xf Detection in Sharpshooter Insects*. Copesan Annual Meeting, Fresno, CA. Invited speaker.
- Groves, R. L., and Chen J., 2005, Epidemiology of Pierce's Disease in the central San Joaquin Valley of California: factors affecting pathogen distribution and movement. Pierce's Disease Research Symposium, 5-7 December, California Department of Food and Agriculture, San Diego, CA. Invited symposium speaker.**

#### **CONTRACTS AND GRANT-IN-AID**

- Groves, R.L., Meisch, M. V. and Dame D. 1994. Efficacy and formulation testing of riceland mosquito adulticides. Grant funded by American Cyanamid, \$26,050 for two years.
- Meisch, M. V. and Groves, R. L. 1994. Non-target effects of *Bacillus sphaericus* against *Daphnia* spp. Grant funded by McLaughlin Gormley King, \$3,000 for one year.
- Meisch, M.V. and Groves, R. L. 1995. Larvicide testing of *Bacillus thuringiensis* var. *israelensis* against floodwater mosquito species. Grant funded by AgroEvo Corporation, \$7,500 for two years.
- Meisch, M.V. and Groves, R. L. 1996. Rate, formulation and ULV delivery testing of mosquito adulticides. Grant funded by Sandoz, Inc., \$6,500 for one year.
- Gray, S. M. and Groves, R. L. 2001. Knowledge of PVY movement into and distribution within potato tubers may improve accuracy and reliability of virus detection prior to a winter test. Grant funded by the National Potato Council, CSREES, \$49,999 for one year.
- Groves, R. L. and Gray, S. M. 2002. Genetic variation of Potato virus Y isolates in Maine and their differential ability to infect potato tubers. Grant funded by the National Potato Council, CSREES, \$7,000 for one year.
- Groves, R. L. and Chen, J. 2003. Epidemiology of Pierce's Disease in the Central San Joaquin Valley of California: Factors Affecting Pathogen Distribution and Dispersal. Grant funded by the University of California-DANR, Pierce's Disease Research Grant Program, \$77,458 for one year.
- Groves, R. L. and Chen, J. 2004. Epidemiology of Pierce's Disease in the Central San Joaquin Valley of California: Factors Affecting Pathogen Distribution and Dispersal. Grant funded by the University of California-DANR, Pierce's Disease Research Grant Program, \$65,335 for one year.
- Groves, R.L. and Chen, J. 2004. Epidemiology of Almond Leaf Scorch Disease in the San Joaquin Valley of California. Grant funded by the Almond Board of California, \$47,946 for one year.
- Johnson, M., Groves, R., Daane, K., and Backus, E. 2004. Spatial population dynamics and overwintering biology of the glassy-winged sharpshooter, *Homalodisca coagulata*, in California's

- San Joaquin Valley. Grant funded by the California Department of Food and Agriculture, \$162,283 for three years.
- Hagler, J. R., Blackmer, J. L., Daane, K., Groves, R., and Henneberry, T. 2004. Quantifying landscape-scale movement patterns of glassy-winged sharpshooter and its natural enemies using a novel mark-capture technique. Grant funded by the University of California-DANR, Pierce's Disease Research Grant Program, \$123,736 for two years.
- Hagler, J. R., Daane, K., Fournier, V., Groves, R., and Henneberry, T. 2004. A novel immunological approach for quantifying predation rates on glassy-winged sharpshooter. Grant funded by the University of California-DANR, Pierce's Disease Research Grant Program, \$161,354 for two years.
- Hagler, J. R., Henneberry, T., Daane, K., Fournier, V., de Leon, J., Groves, R., and Civerolo, E. 2004. Identifying key predators of the various GWSS lifestages. Grant funded by the California Department of Food and Agriculture, \$172,050 for three years.
- Groves, R.L. and Chen, J. 2005. Epidemiology of Almond Leaf Scorch Disease in the San Joaquin Valley of California. Grant funded by the Almond Board of California, \$41,400 for one year.
- Groves, R.L., Johnson, M.W., Hagler, J.R., and Luck R. 2005. Dispersal and movement of the glassy-winged sharpshooter and associated natural enemies in a continuous, deficit-irrigated agricultural landscape. Grant funded by the University of California-DANR, Pierce's Disease Research Grant Program, \$112,193 for two years.
- Groves, R.L., and Daane, K. 2006. Assessing the potential of forage alfalfa crops to serve as *Xylella fastidiosa*, primary inoculum sources in the San Joaquin Valley, Pierce's Disease Research Grant Program, \$150,182 for two years.
- Groves R.L., and Chen. J. 2006. Epidemiology of Almond Leaf Scorch Disease in the San Joaquin Valley of California. Grant funded by the Almond Board of California, \$29,900 for one year.