

2016 Curriculum vitae



NAME: Dr. Andrew J. Landers
DEPARTMENT/UNIT: Entomology
TITLE: Senior Extension Associate
CAMPUS ADDRESS: Department of Entomology, Cornell University, NYSAES, 630 W. North St., Geneva, NY 14456
PHONE: 315 787-2429
EMAIL: ajl31@cornell.edu
WEB PAGE:
<http://web.entomology.cornell.edu/landers/pestapp/index.htm>

BACKGROUND

Education

- Ph D, University of Bath, Bath, UK, 1992.
Dissertation Title: The development and characteristics of a direct injection crop sprayer
- MSc, Cranfield University, Silsoe, UK, 1984.
Major: Ag Eng
Dissertation Title: Labour and Machinery Planning
- BSc, Royal Agricultural University, Cirencester, 1970.
Major: Agriculture
Supporting Areas of Emphasis: Ag Eng

Academic Ranks

Senior Extension Associate: 1998 -
Extension: 60%, Research: 30%, Teaching: 10%

Primary Departmental/Unit Program Area

Geneva Entomology

Areas of Expertise (keywords)

Teaching Keywords application technology, effective pesticide use

Research Keywords engineering controls, application technology, crop spraying

Extension Keywords application technology, crop sprayers, pesticide application, spray drift

Professional Positions

- Pesticide application technology specialist, Cornell University, Ithaca, NY, USA. (1998- Present).
- Faculty Fellow, Atkinson Centre for a Sustainable Future, (2016- present)
- Head, Department of Agric. Eng, Harper Adams University, Newport, UK. (1994 - 1996).
- Senior Tutor in Agric. Engineering, Royal Agricultural University, Cirencester, UK. (1975 - 1994).

Tutor in Ag Eng, Aylesbury College, Aylesbury, UK. (1972 - 1974).

Sabbaticals and Study Leaves (year, project, location)

Honors and Awards

Visiting fellow, Australian Government Grape and Wine Research Development Corporation. (2013).

Excellence in IPM award, NY Integrated Pest Management Program (2012)

Major contribution in research and education, New York Wine and Grape Foundation. (2010).

Visiting fellow, Australian Government Grape and Wine Research Development Corporation. (2008).

Outstanding Accomplishments in Extension/Outreach Award, University, College of Agriculture and Life Science. (2007).

Chartered Environmentalist, Society for the Environment. (2006).

International Traveling Fellowship, Cornell University. (2004).

Travel award, Viticulture Consortium –East. (2004).

International travel award, Royal Academy of Engineering. (1996).

Fellow, Winston Churchill Memorial Trust. (1995).

Travel scholarship, Her Majesty's Agricultural Inspectorate, Health and Safety Executive and the Douglas Bomford Trust. (1989).

Graduate scholarship, Douglas Bomford Trust. (1983).

GRANT SUPPORT

See attachment: [Current and Pending Support, 2015/2016](#)

Other Relevant Research Activities, Accomplishments, etc.

I have reviewed 3 grant proposals, 1 for the New Zealand Government, and 6 papers for journals throughout 2015.

ACADEMIC RESPONSIBILITIES

Research Responsibilities

Current Postdoctoral Associates

Tomas Palleja Calveras (February 2014 –

Past Postdoctoral Associates

Changyuan Zhai (April 2013 – April 2014)

Llorens Calveras, Jordi (September 2012 – Dec 2013)

Muise, Bradley, (Summer 2008 – Summer 2010)

Teaching and Advising Responsibilities

Teaching:

Grape Pest Management at CU, Entomology 3200, PPA 3200, Fall semester, 2007 - present

Guest lecture and lab at CU: Orchard Management Hort 4450

Guest lecture and lab at CU: Intro to Farm Machinery, Agri Science 2940

Guest lecture and lab at Niagara College & Brock University, Ontario, Canada: Viticulture students,

Guest lecture and lab at Finger Lakes Community College: Viticulture students,

Professional Advising

Andrew Schumann, Cornell Summer Scholar, Summer 2015

Kasia Taylor, Cornell Summer Scholar, Summer 2014

Fariba Kanga, Cornell Summer Scholar, Summer 2013

Zhou, Jizhong, PhD student, China Agricultural University, Beijing,
(Directed Individual/Independent Study). (Summer 2009 - Summer 2010)

Larzelere, William (Technician). (Winter 2008 – Winter 2013)

Extension/Outreach Responsibilities

Extension Publications and Presentations (last five years)

	2015	2014	2013	2012	2011	Median
# Extension Publications	8	11	9	8	6	8
# Extension Presentations	26	26	44	36	42	36
Total contact hours	5017	5830	4010	2920	5949	5017

Program Work Team(s)/Program Councils, Administrative Leadership

Committee Member, Fruit Program Work Team.

Committee Member, Grape Program Work team.

Committee Member, NYSAES Safety committee

Extension/Outreach Workshops, Field Days, and Conference presentations

Summary of talks/workshops/conferences, 2015:

NY State: 17

Other US States: 6

Canada: 1

South Africa: 3

Europe: 5

5747 attendees

Policy Engagement/Leadership

Deans Committee on Viticulture and Enology Research and Extension at CALS.

Key Audiences and Scope of Impact

Managing fruit pests and diseases

Impact Summary: The primary focus of this project is to support the existing and expanding fruit industries in New York and other states in the USA, by increasing the abilities of fruit producers and their advisors to manage pests and infectious diseases that limit profitability and preclude sustainable production if not addressed adequately. Additionally, the projects have several components that are applicable to the fruit industry in western Europe, Australia and New Zealand. The projects have three primary foci. First, Extension education, synthesizing and intelligibly presenting the research-based technical information that producers and advisors need to know in order to manage their pests and diseases efficiently, effectively, and economically. Second, basic and applied research, to provide new information that will serve as the foundation for (i) designing improved management programs for traditional pests and diseases, and (ii) identifying the causes of and controls for new pests and diseases as they arise. And third, undergraduate and graduate education at Cornell's College of Agriculture and Life Sciences, to train the next generation of orchard and vineyard managers and their research/advisory community.

Engineering methods to improve pesticide application and reduce environmental pollution

Impact Summary: We have striven to take the mystique out of engineering science and show our growers how they can adopt interesting techniques to improve their pesticide application methods. We have shown how to reduce pesticides in apples and grapes by 30 percent and how to penetrate thatch in turfgrass and get better anthracnose control. We have shown all airblast sprayer operators how to target their sprayers properly to avoid drift onto neighboring properties. We have instructed all new employees of Cornell University who will apply pesticides. We have developed and implemented one-day workshops to provide one-day intensive courses in application technology in the fruit industry.

Summary of extension and outreach activities by CALS faculty.

The use of engineering methods to optimise pesticide use, improve deposition and reduce drift.

To develop new methods to assist growers apply pesticides whilst reducing environmental pollution and operator contamination.

To show growers via field demonstrations, workshops and conference presentations how to monitor pesticide use, improve air direction and increase droplet penetration.

To show growers novel and interesting methods of applying pesticides precisely. To inspire growers to adopt new technology via awareness to technology and grant aid where applicable.

To improve the construction and use of existing crop sprayers.

To use interesting methods for teaching engineering science in an applied manner for farmers and growers.

OTHER CURRENT PROFESSIONAL ACTIVITIES

Professional Service

Advisor, EPA Operator Protection Division, Washington, DC.(Scientific Advisory Panel member)

Advisor, NY Department of Environmental Conservation.

Member, NY Wine and Grape Foundation, Canandaigua, NY.

Member, NY Wine Grape Growers Association, Branchport, NY.

Professional Assignments (Committees, Review Panels)

Committee Member

ASABE Blue Ribbon Committee.

ASABE P208 Extension Committee,

ASABE PM 41 Pest Control and Fertilizer Application Committee,

International or State/Local

International

Member, Alpha Epsilon.

Member, Association of Applied Biologists.

Member, Epsilon Sigma Phi.

Conference-Related:-

Suprofruit: International application techniques conference:

Scientific committee member:

Cuneo, Italy 2004

Barcelona 2006

Wageningen, 2008.

Bordeaux 2011

Valencia, 2013

Lindau, Germany, 2015

Cool Climate Viticulture Conference to be held in Brighton, UK, September 2016

- International scientific panel member

4th International Symposium on Pesticides and Environmental Safety & 5th Pan Pacific Conference on Pesticide Science and 8th International Workshop on Crop Protection Chemistry and Regulatory Harmonization , Sept. 15-20th, 2012 Beijing, P.R.China
Scientific committee member

2nd International workshop of plant protection machinery and application techniques. Sept 15-17,2010, Beijing, China, Scientific committee member

Member, Soil and Water Conservation Society.

Member, EPA Scientific Advisory Panel. (2007).

Chartered Environmentalist, Society for the Environment. (2006 - Present).

Chartered Engineer, Engineering Council. (1994 - Present).

Member, American Society of Agricultural and Biological Engineers. (1988 - Present).

Member, European Soc of Ag Eng. (1980 - Present).

Fellow, Institution of Agric Engineers. (1992 - Present).

College of Agriculture & Life Sciences Service

Committee Member

Committee for employee of the year at NYSAES. (2005).

NYSAES Safety Committee (Fall2014 –present)

OTHER CURRENT PROFESSIONAL CONTRIBUTIONS

Editor, Reviewer and Chair Activities

Science peer reviewer for the MBIE 2015 Science Investment Round. New Zealand Ministry of Business, Innovation and Employment

"ADAS/HSC in the UK", Grant Review Panel.

"Agricultural and Agri-food Canada", Grant Review Panel.

"CREES new equipment grant", Grant Review Panel.

"Viticultural Consortium – East", Grant Review Panel.

Conference

"Suprofruit - International workshop on spray application techniques in fruit growing", Reviewer, scientific committee member, Conference Paper, 6 reviews every 2 years (2004- Present).

"1st North American Conference on Precision Fruit Spraying", Editor, Conference Proceedings, 12 reviews. (2008).

Grants

Reviewer, Grant Proposal, 4 reviews, per year

Journals

"Transactions of ASABE" „Sensors, ASTM Journal, Jnl. Of Agricultural Engineering reviewer, 6 approx. reviews per year

Consulting

Fountainhead Group.

Intellectual Property

1. Airflow controller, Provisional patent
Landers, A. J., November 23, 2009

Media Contributions

Internet

Effective spraying with backpack sprayers for organic growers (2012)
<http://moodle.cce.cornell.edu/>

Effective spraying with boom sprayers for organic growers (2012)
<http://moodle.cce.cornell.edu/>

Nozzle selection and calibration of airblast sprayers for orchards (2012)
<http://moodle.cce.cornell.edu/>

Nozzle selection and calibration of airblast sprayers for vineyards (2012)
<http://moodle.cce.cornell.edu/>

Main Pesticide application technology website. All aspects of application technology are contained in these pages. <http://www.nysaes.cornell.edu/ent/faculty/landers/pestapp>. (December 2008)

Equipment Calibration website. (with Keith Waldron and Mary Woodsen, NY IPM):
Module 13 boom sprayer calibration.
<http://www.nysaes.cornell.edu/ipmnet/sare.mod/index.html>. (2008)

Calibration of Airblast Sprayers for Orchards. Part 1 Selecting and Changing Nozzles. US version. http://www.youtube.com/watch?v=6izHj0GF1rY&feature=channel_page. (November 2008)

Calibration of Airblast Sprayers for Vineyards. Part 1 Selecting and Changing Nozzles. Metric version.
http://www.youtube.com/watch?v=D0dNhPVdxPQ&feature=channel_page. (November 2008)

Calibration of Airblast Sprayers for Vineyards. Part 1 Selecting and Changing Nozzles. US version. http://www.youtube.com/watch?v=QW7MOuEHP48&feature=channel_page. (November 2008)

Calibration of Airblast Sprayers for Vineyards. Part 2 Measuring Liquid Flow. Metric version. http://www.youtube.com/watch?v=3ZE-NmeXn8w&feature=channel_page. (November 2008)

Calibration of Airblast Sprayers for Vineyards. Part 2 Measuring Liquid Flow. US version. http://www.youtube.com/watch?v=_mAB41soyxE&feature=channel_page. (November 2008)

Calibration of Airblast Sprayers for Orchards. Part 2 Measuring Liquid Flow. US version. http://www.youtube.com/watch?v=eAfEljwg5HI&feature=channel_page. (October 2008)

New York State Integrated Pest Management Elements for Apple, NYS IPM Program, Cornell University. Carroll, J.E., Robinson, T.L., Agnello, A.M., Reissig, W.H., Rosenberger, D.A., Turechek, W.W., Landers, A.J., Curtis, P.D., Cheng, L., Merwin, I.A., Lakso, A.N., Schupp, J.R., Watkins, C.B., Nyrop, J.P., Straub, R.W., Breth, D.I., Fargione, M.J., Iungerman, K.A. <http://nysipm.cornell.edu/elements/apple/default.asp>. (2004)

PUBLICATIONS LIST FOR Dr ANDREW LANDERS

BOOKS

Landers, A.J. (2010) Effective vineyard spraying. 261pp. Keuka Park: Effectivespraying.com.

Landers, A.J. (2016) Effective orchard spraying. 344pp. Keuka Park: Effectivespraying.com.

Book chapters

Landers A.J. (2015) Pesticide application technology for vineyards. Pp.185-192. Compendium of grape diseases, disorders and pests. 2nd ed. Wilcox, W.F., Gubler, W.D and Uyemoto, J.K., eds. St. Paul, MN: The American Phytopathological Society

Landers, A.J (2008) Spray drift mitigation. pp. 196-215. In: Tony K. Wolf (ed.). Wine Grape Production Guide for Eastern North America. NRAES-145. Ithaca, NY: Natural Resource, Agriculture, and Engineering Service (NRAES).

Landers, A.J (2008) Spray application technology. Raspberry and Blackberry Production Guide for the North East, Midwest and Eastern Canada (NRAES-35), Bushway, L., Pritts, M., and Handley, D., eds. Pp. 116-131. Ithaca, N.Y: Natural Resource, Agriculture, and Engineering Service (NRAES).

RESEARCH

A. Research publications (Reports, academic conference papers):

Palleja, T, **Landers, A.J. (2016)**. Electro-leaf, a system to estimate in-canopy air turbulence in real-time. Computers and Electronics in Agriculture (*under review*).

Zhai, C., **Landers, A.J.**, Zhang, B., **(2016)**. An RFID solution for orchard and vineyard sprayer's movement identification and a spray monitoring and guiding system. Computers and Electronics in Agriculture (*under review*).

Palleja, T, **Landers, A.J. (2016)**. Orchard and vineyard real time spraying adjustments using ultrasonic echoes. In: *Aspects of Applied Biology* 132. International advances in pesticide application. Pp 405-410.

Palleja, T, **Landers, A.J.**, Llorens, J. and Gil, E. **(2016)**. Real time spraying adjustments using in-canopy sensors to measure coverage. In: *Aspects of Applied Biology* 132. International advances in pesticide application. Pp 129-135.

Landers, A.J, Palleja Cabre, T. and Llorens Calveras J. (2016). Park the plume – developing engineering solutions for drift mitigation in fruit crops
Bio Systems Engineering (In press)

Tong, Z., Whitlow, T. H., **Landers, A. J**, Flanner, B. (2015). A case study of air quality above an urban roof top vegetable garden. *Environmental Pollution* 2015

Palleja T. and **Landers, A.J**, (2015). Precision fruit spraying: measuring canopy density and volume for air and liquid adjustment. In Proc. SuproFruit 13thWorkshop Spray application in fruit growing. Lindau, Germany. Pp.76-77. Julius Kuhn Archiv No. 448

Landers, A.J., Zhai, C., Llorens, J. and Larzelere, W. (2015). Monitoring the sprayer. In Proc. SuproFruit 13thWorkshop Spray application in fruit growing. Lindau, Germany. Pp.74-75. Julius Kuhn Archiv No. 448

Palleja T. and **Landers, A.J**, (2015). Real time canopy density estimation using ultrasonic envelope signals in the orchard and vineyard. *Computers and Electronics in Agriculture* 115 (2015) 108–117

Agnello, A., **Landers, A.J.**, Loeb, G. (2015). A fixed-spray system for spotted wing *Drosophila* management in high tunnel raspberries. *Integrated protection of fruit crops Subgroup “Soft Fruits” IOBC-WPRS Bulletin Vol. 109, 2015 pp. 165-170*

Agnello, A., **Landers, A.J.**, Loeb, G. (2015) A fixed-spray system for Spotted Wing *Drosophila* management in high tunnel bramble crops. *The Journal of Berry Research* 5 (2015) 81–88

Tong, Z.; Whitlow, T. H.; MacRae, P. F.; **Landers, A. J.**; Harada, Y. (2015). Quantifying the effect of vegetation on near-road air quality using brief campaigns. *Environmental Pollution* 2015, 201, 141-149.

Palleja Cabre, T. and **Landers, A.J** (2014). Precision spraying in the orchard and vineyard – measuring canopy density. *NY Fruit Quarterly* Vol. 22 No. 4 Winter pp.15-17

Agnello, A., **Landers, A.J.** and Loeb, G. (2014) A Fixed spray system for spotted wing drosophila management in high tunnel raspberries. *NY Fruit Quarterly* Vol. 22 No. 3 Fall pp19-23

Zhai, C., **Landers, A.J** and Zhang Bo (2014) Performance of Orchard and Vineyard Spray Monitoring System using RFID Technology. Paper 2014-0049 Proc. 18th World Congress CIGR Agricultural Engineering, 18th September, Beijing, China

Landers A.J. (2014) Technologies for the precise application of pesticides in orchards. *IFTA, Compact Fruit Tree*. Vol. 47 No. 2. Pp. 21-26

Llorens , J and Landers A.J. (2014) Variable rate spraying: digital canopy measurement for air and liquid electronic control. In: *Aspects of Applied Biology* 114. International advances in pesticide application. Pp 1-8

Landers A.J , (2014). The development of a grape berry moth sprayer for precision viticulture. Research Report for awards made by Lake Erie Grape growers. Geneva: Cornell University, NYSAES

Landers, A.J. (2014) Airflow and liquid flow adjustment. Progress report for the NY Apple Research and Development Program. Geneva: Cornell University, NYSAES

Landers, A.J. (2014) Electronic sensor . Progress report for the NY Apple Research and Development Program. Geneva: Cornell University, NYSAES

Landers A.J , (2014). The development of a sprayer for precision viticulture. Research Report for director granted endowments . Geneva: Cornell University, NYSAES

Landers A.J , (2014). Sprayer for precision fruit growing. Research Report for Hatch awards . Geneva: Cornell University, NYSAES

Landers A.J , (2014). Sprayer clinics. Research Report for Smith Lever awards . Geneva: Cornell University, NYSAES

Llorens Calvers, J., **Landers, A.J.** and Larzelere W. **(2013).** Precision application of pesticides in orchards – adjusting liquid flow. *NY Fruit Quarterly*. Vol. 21. No.4 Winter 2013. Pp7- 10.

Gil-Moya, E., **Landers, A.J.**, Gallart, M. and Llorens J. **(2013).** Development of two portable patternators to improve drift control and operator training in the operation of vineyard sprayers *Spanish Journal of Agricultural Research*, September 2013, Vol. 11. No.3.

Llorens, J and **Landers, A.J., (2013).** Precision fruit spraying: digital canopy measurement for air and liquid control. In *Proc: Supro Fruit 2013, 12th workshop on spray application techniques in fruit growing*. Eds. Molto, E., Val, L., Juste, F., Chueca, P., and Garceria, C., Pp.126-128. Valencia: Universitat Politecnica de Valencia

Landers, A.J. and Agnello, A. **(2013).** Further developments of a fixed spray system for high-density fruit trees. In *Proc: Supro Fruit 2013, 12th workshop on spray application techniques in fruit growing*. Eds. Molto, E., Val, L., Juste, F., Chueca, P., and Garceria, C., Pp.129-131. Valencia: Universitat Politecnica de Valencia

Kanga, F., Llorens, J., **Landers, A.J., (2013)** Decreasing Airflow by an Adjustable Louvre System Increases Spray Efficiency. In. *Proc. 2013 Summer scholars program, undergrad research poster session*, July 31, Cornell University, NYSAES, Geneva. p8 Geneva: Cornell University

Llorens,J., **Landers, A.** and Larzelere, W. **(2013).** Digital measurement and actuators for improving spray applications in tree and vine crops. *Proc. 9th European Conference on Precision Agriculture*. July 7-11 2013. Lleida, Catalonia, Spain

Agnello, A., **Landers, A.**, Loeb, G., and Pritts, M. **(2013).** A fixed-spray system for SWD management in high-tunnel raspberries. *Proc. Cornell Fruit Field Day, NYSAES, Geneva, August 1st 2013* P.28. Geneva: Cornell University

Landers, A., Llorens, J., and Larzelere, W. **(2013).** Precision spraying in the orchard and vineyard. *Proc. Cornell Fruit Field Day , NYSAES, Geneva, August 1st 2013* P.28 Geneva: Cornell University

Landers, A.J. and Larzelere, W. **(2012)** The development of a spray monitoring system as an aid to orchard management and traceability. *NY Fruit Quarterly* Vol. 20 (4) 21-24

Landers A.J. (2012). Challenges and opportunities of pesticide application in agriculture and horticulture. In: *Proc. 4th International Symposium on Pesticides and Environmental Safety & 5th Pan Pacific Conference on Pesticide Science and 8th International Workshop on Crop Protection Chemistry and Regulatory Harmonization* , Sept. 15-20th, Beijing, P.R.China, eds. Z. Zhongning, J. Unsworth, and H. Matsumoto. Pp.10-12. Beijing: China Agricultural University Press

Landers A.J. (2012). Improving spray deposition in fruit crops - airflow adjustment is the answer. In: *Proc. 4th International Symposium on Pesticides and Environmental Safety & 5th Pan Pacific Conference on Pesticide Science and 8th International Workshop on Crop Protection Chemistry*

and Regulatory Harmonization , Sept. 15-20th, Beijing, P.R.China, eds. Z. Zhongning, J. Unsworth, and H. Matsumoto. Pp.224-225. Beijing: China Agricultural University Press

Landers, A.J., Balsari, P., Gil, E., **(2012)**. Putting the spray onto the target – the development and demonstration of vertical patternators for fruit growers. Presented at the 2012 ASABE Annual International Meeting, Dallas, TX, Paper No. 121336783, ASABE, 2950 Niles Road, St Joseph, MI 49085-9659

Khot, L.R., Ehsani, R., Albrigo, G, Larbi, P.A., **Landers, A.J.**, Campoy, J. and Wellington,C. **(2012)**.

A Variable Rate Airblast Sprayer Retrofit for Use in Citrus Production. *Biosystems Engineering*, Volume 113, Issue 1, September 2012, Pages 76-85

Zhou, J., **Landers, A.J.**, He, X., **(2012)**. Dosage Adjustment for Pesticide Application in Vineyards. *Trans. ASABE*. Vol.55(6) 2043-2049

Khot, L.R., Ehsani, R.J., Albrigo, G., **Landers, A.J.**, Larbi, P.A. **(2012)**

Spray pattern investigation of an axial-fan airblast precision sprayer using a modified vertical patternator. *Applied Engineering in Agriculture*. **28(3): 647-654**.

Landers A.J., **(2012)**. Drift from fruit sprayers – why not prevent it at source? In: *Aspects of Applied Biology* 114. International advances in pesticide application. Pp 235-242

Landers A.J., Larzelere, W and Muise, B. **(2012)**. Advances in autonomous pesticide application technology for orange groves In: *Aspects of Applied Biology* 114. International advances in pesticide application. Pp91-98

Landers, A.J and Evans, K. **(2012)** It's all to do with technique and timing. *In Proc.* International Cool Climate Symposium. 31st January – 4th February 2012. Hobart, Tasmania.

Landers, A.J. (2011). Improving spray deposition and reducing drift – airflow adjustment is the answer. *NY Fruit Quarterly*, Vol 19 (4) Winter. Pp3-6

McDermott, L., and **Landers, A.J. (2011)**. Designing a better sprayer for pesticide application in strawberries. *NY Fruit Quarterly*, Vol 19 (4) Winter. Pp17-19

Deng, W., Zhao C., Zhang L-D., Cheng, L-P and **Landers A.J. (2011)**. Spectral target-detecting system using sine-wave modulation. *Spectroscopy and Spectral Analysis* 10/2011; 31(10):2771-7.

Khot, L.R., Ehsani ,R., Landers, A.J., Tumbo, S.D., Schumann, A. , **Landers, A.J**, Larzelere ,W.M

and [Albrigo](#) , L.G. **(2011)**. Testing a Modified Airblast Sprayer for Use In Citrus. *In Proc.* American Society Horticultural Science Conference, Sept 25-28, Waikaloa, HI

Landers, A.J., **(2011)** Advances in fungicide application technology for orchards and vineyards. In Proc. 44th Congresso Brasileiro de Fitopatogia, 14-19th August 2011. Bento Goncalves, Brasil

Landers, A.J. and Larzelere, W.M. **(2011)**. Development of a spray monitoring system for fruit crops. In Proc: Supro Fruit 2011, 11th workshop on spray application techniques in fruit growing. Eds. Loquat,B. and Douzals, J-P. Pp.128-128. Prignonrioux: Centre Ctifl Lanxade, France

Landers, A.J., (2011). Why care about the air? In Proc: Supro Fruit 2011, 11th workshop on spray application techniques in fruit growing. Eds. Loquat,B. and Douzals, J-P. Pp.24-25. Prignonrieux: Centre Ctifl Lanxade, France

Landers, A.J., Larzelere, W.M., Muise, B. (2011). In pursuit of the inevitable - the development of an autonomous sprayer for fruit crops-part II. In Proc: Supro Fruit 2011, 11th workshop on spray application techniques in fruit growing. Eds. Loquat,B. and Douzals, J-P. Pp.112-113. Prignonrieux: Centre Ctifl Lanxade, France

Gil, E., Llorens, J., **Landers, A.J.**, Llop,J. and Giralt L. (2011). Field validation of DOSAVIÑA, a decision support system to determine the optimal volume rate for pesticide application in vineyards. European Journal of Agronomy, Vol 35, 33-46, June 2011

Zhou, J., He, X., **Landers, A.J.** (2011). Comparison experiment of three grapevine application rates adjusted models. [Nongye Jixie Xuebao/Transactions of the Chinese Society of Agricultural Machinery](#) Volume 42, Issue 6, June 2011, Pages 80-83

Landers A.J , Wilcox W. F. and Loeb,G (2011). The development of a precision sprayer for precision viticulture. The Report of 2010 proposals received and awards made and final reports to grant year 2010. Viticulture Consortium – East. Geneva: Cornell University, NYSAES <http://www.nysaes.cornell.edu/pubs/vitcon/>

Landers, A.J. (2011) Airflow adjustment and monitoring flow. Progress report for the NY Apple Research and Development Program. Geneva: Cornell University, NYSAES

Landers, A.J. (2010) Target your sprays and save money –methods of improving deposition and reducing drift. Proc. Symposium on Pest Management for Midwestern Vineyards, Osage Beach, MI, February 6-7, 2010. Ed. K. Striegler,pp. 23-34. Columbia: University of Missouri

Landers, A.J. and Muise, B. (2010) The development of an automatic canopy sprayer for fruit crops. In: *Aspects of Applied Biology* 99. International advances in pesticide application. pp. 29-34

Zhou, J. and **Landers, A.J. (2010)**. A study of dosage adjustments for pesticide application in vineyards. Proc. 2nd International workshop of plant protection machinery and application techniques Sept 15-17, Beijing, China. Ganzelmeier, H. ed p3-12. Beijing: China Agricultural University Press

Zhou, J. and **Landers, A.J. (2010)**. Dosage adjustment for pesticide application in orchards and vineyards. Proc. 2nd International workshop of plant protection machinery and application techniques. Sept 15-17, Beijing, China. Ganzelmeier, H. ed p.13-22. Beijing: China Agricultural University Press

Landers, A.J. (2010). Drift mitigation in fruit crops –airflow adjustment is the answer. Proc. 2nd International workshop of plant protection machinery and application techniques. Sept 15-17, Beijing, China. Ganzelmeier, H. ed p.77. Beijing: China Agricultural University Press

Landers, A.J. (2010). Seeing is believing – enhancing the Pygmalion effect. Proc. 2nd International workshop of plant protection machinery and application techniques. Sept 15-17, Beijing, China. Ganzelmeier, H. ed p.78. Beijing: China Agricultural University Press

Landers A.J , Wilcox W. F. and Loeb,G (2010). Precision application of botrytis and GBM sprays The Report of 2010/09 proposals received and awards made and final reports to grant year 2009. Viticulture Consortium – East. Geneva: Cornell University, NYSAES <http://www.nysaes.cornell.edu/pubs/vitcon/>

Landers A.J , Wilcox W. F. and Loeb,G (2010). The development of a precision sprayer for precision viticulture. The Report of 2010/09 proposals received and awards made and final reports to grant year 2009. Viticulture Consortium – East. Geneva: Cornell University, NYSAES <http://www.nysaes.cornell.edu/pubs/vitcon/>

Landers, A.J. (2010) Airflow adjustment and monitoring flow. Progress report for the NY Apple Research and Development Program. Geneva: Cornell University, NYSAES

Landers, A.J. (2010) Blowing the cobwebs off spray drift research. Resource – engineering and technology for a sustainable world. July/Aug pp. 19-21 ASABE, 2950 Niles Road, St Joseph, MI 49085-9659

Landers, A.J. (2010). Developments towards an automatic precision sprayer for fruit crop canopies. Presented at the 2010 ASABE Annual International Meeting, Pittsburgh PA, Paper No. 1008973, ASABE, 2950 Niles Road, St Joseph, MI 49085-9659

Zhou, J. and **Landers, A.J. (2010).** Choosing the optimal trace, sampling method and dosage adjustment for pesticide application in vineyards. Presented at the 2010 ASABE Annual International Meeting, Pittsburgh PA, Paper No. 1009040, ASABE, 2950 Niles Road, St Joseph, MI 49085-9659

Muise, B. and **Landers, A.J. (2010).** The development of a fruit canopy sprayer compatible with an autonomous tractor. Presented at the 2010 ASABE Annual International Meeting, Pittsburgh PA, Paper No. 1008964, ASABE, 2950 Niles Road, St Joseph, MI 49085-9659

Larzelere, W. and **Landers, A.J. (2010).** Development of a spray monitoring system for a vineyard canopy sprayer. Presented at the 2010 ASABE Annual International Meeting, Pittsburgh PA, Paper No. 1009012, ASABE, 2950 Niles Road, St Joseph, MI 49085-9659

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Equipment Calibration website (with Keith Waldron and Mary Woodsen, NY IPM):

Module 13 boom sprayer calibration

<http://www.nysaes.cornell.edu/ipmnet/sare.mod/index.html>

Internet: You Tube videos

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Calibration of Airblast Sprayers for Orchards Part 1 Selecting and Changing Nozzles US version

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Distance learning courses

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<http://moodle2.cce.cornell.edu/>

Effective spraying with boom sprayers for organic growers 2012

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Trade journals

Landers A.J (2014) Multi-row sprayers offer great improvements in timeliness. Good Fruit Grower November 2014 pp 24-25

Timotheou S. and **Landers A.J. (2013)**. Its's all in the way you spray. The Australian & New Zealand Grape grower & Winemaker, November 2013, Issue 598, pp45-47

Lehnert R and **Landers, A.J. (2013)** Growers need to adjust sprayers for deposition and drift Good Fruit Grower. Sept. 1 2013

Landers, A.J., Gale, T., Evans, K. (2012). Tunnel sprayers – the ultimate precision sprayer for the vineyard. The Australian & New Zealand Grapegrower & Winemaker, July 2012, Issue 582, pp44-47

Landers, A.J. (2012) Improving spray application: Fine tuning the sprayer. Carrot Country. Spring 2012. Vol 20, No.1 Pp10-11

Landers, A.J. (2010) How to spray more efficiently. Wines and Vines, June 2010

Landers, A.J. (2009) Developing precision canopy sprayers. Good fruit grower, April 1, 2009, Vol. 60 No. 7. pp24 -25

Landers, A.J. (2008) Automatic spraying is coming. Wines and Vines, July 2008, pp 46-49

Landers, A.J. (2007) Hitting the target, Inexpensive ways to spray more effectively. Wines and Vines, May 2007, pp56-61

B. Extension Outreach: Grower conferences/seminars/ workshop presentations

Landers, A.J. (2014) Progress in precision spraying. In Proc. NY Fruit and Veg Expo, Syracuse, Jan. 21

Landers, A.J. (2014) Improving spray deposition and monitoring techniques. Handouts. Lake Ontario Fruit School. Lockport. 3rd Feb.

Landers, A.J. (2014)) Improving spray deposition and monitoring techniques. Handouts Lake Ontario Fruit School. Williamson. 4th Feb.

Landers, A.J. (2014) New developments in orchard spraying, Handouts, Hudson Valley Fruit school. Kingston. 12th Feb.

Landers, A.J. (2014) New developments in grape and berry spraying Hudson Valley Fruit school. Kingston, 13th Feb.

Landers, A.J. (2014) Prevention is better than cure - minimising herbicide drift in vineyards In Proc. Ontario Fruit and Veg. Conference Niagara Falls, Canada.19th Feb.

Landers, A.J. (2014) Precision spraying management. In Proc. Int. Fruit Tree Assoc (IFTA) Kelowna, BC, Canada. 24th Feb.

Landers, A.J. (2014) Vineyard spraying update. In Proc. Finger Lakes grape growers conference. Waterloo.1st March. Ithaca: CCE

Landers, A.J. (2014) Vineyard of the future panel. In Proc. Finger Lakes grape growers conference. Waterloo.1st March. Ithaca: CCE

Landers, A.J. (2014) Herbicide application to reduce drift. Finger Lakes grape growers conference. Waterloo.1st March. Ithaca: CCE

Landers, A.J. (2014) Spray technology. Handbook, Berry growers. Binghampton. 4th March. Ithaca: CCE

Landers, A.J. (2014) Drift and Enlist. Monroe Tractors farmers meeting. Canadaigua. 6th March

Landers, A.J. (2014) Application technology for organic farmers. Handbook. Riverhead. 11th March. Ithaca: CCE

Landers, A.J. (2014) Application technology for field crop farmers, Neilsen seeds meeting. Benton, NY. 18th March

Landers, A.J. (2014) Application technology for FL grape growers. Hellena Chemicals meeting.18 March

Landers, A.J. (2014) Using GPS Sprayer technology. Lake Erie Grape Growers conf. Fredonia. 20th March. Portland: CCE

Landers, A.J. (2014) Application technology for organic farmers. Handbook Geneva. 26th March. Ithaca: CCE

Landers, A.J. (2014) Application technology for organic farmers. Handbook Kingston. 2nd April. Ithaca: CCE

Landers, A.J. (2014) Application technology for organic farmers. Handbook Kingston. 3rd April. Ithaca: CCE

Landers, A.J. (2014) Grape spraying for FL grape growers, Spring Meeting, May 22nd. Hector. Ithaca: CCE

Landers, A.J. (2014) Improving spraying with reducing drift. Workshop booklet for Vineyard Team. San Luis Obispo, CA 16th June

Landers, A.J. (2014) Improving spraying with reducing drift. Workshop booklet for Vineyard Team. Soledad, CA 17th June

Landers, A.J. (2014) Improving spraying with reducing drift. Workshop booklet for Vineyard Team. Lodi, CA 19th June

Landers, A.J. (2014) Vineyard sprayers. FLCC students, Geneva, Course handouts. 25th June. Geneva: NYSAES

Landers, A.J. (2014) Application Technology at Cornell. Nuffield scholars meeting, Geneva. 7th July

Landers, A.J. (2014) Multi-row sprayers, handouts. FL Grape growers tailgate meeting. Poultney 8th July

Landers, A.J. (2014) Spraying hops. NY hop growers field day, Geneva 11th July. Geneva: NYSAES

Landers, A.J. (2014) Effective Vineyard Spraying. Niagara college and Brock University viticulture students, Course Handouts 15th July

Landers, A.J. (2014) Vineyard sprayers, CU Grad students course handouts, Geneva. 22nd July

Landers, A.J. (2014) Vineyard sprayers. FLCC students, Geneva, Course handouts. 29th July. Geneva: NYSAES

Landers, A.J. (2014) Developments in vineyard spraying handouts. Lake Erie Grape Growers summer meeting, Forestville. 20th August

Landers, A.J. (2014) Effective fruit spraying course. Course Handbook. Geneva. 1st-4th September.

Landers, A.J. (2014) Effective vineyard spraying. In Proc. Sustainable Ag Expo, San Luis Obispo, CA. 17th November

Landers, A.J. (2014) Effective spraying of vineyards, Course booklet, UK Vineyard Assoc. Plumpton, UK Dec. 2

Landers, A.J. (2014) Effective spraying of vineyards, Course booklet, UK Vineyard Assoc. Bristol, UK Dec. 2

Landers, A.J. (2014) Research in application technology at Cornell. Harper Adams University, Newport, UK .11th Dec.

Landers, A.J. (2014) Research in application technology at Cornell. Polytechnica Catalonia, Barcelona, Spain 18th Dec.

Landers, A.J. (2013) Sprays on target: fine tuning your sprayer. In Proc. Long Island Ag Forum, Riverhead. Jan 10th 2013. CCE Riverhead.

Landers, A.J. (2013) Exciting developments in application technology. In Proc. Long Island Ag Forum, Riverhead. Jan 10th 2013. CCE Riverhead.

Landers, A.J. (2013) Adjuvants 101. . In Proc. Long Island Ag Forum, Riverhead. Jan 10th 2013. CCE Riverhead.

Landers A.J. (2013) Effective orchard spraying1 - fine tuning. In Proc. NC Apple growers annual meeting , Ashville, NC. 16th January

Landers A.J. (2013) Effective orchard spraying 2 methods of improving deposition. NC Apple growers. In Proc. NC Apple growers annual meeting , Ashville, NC. 16th January

Landers A.J. (2013) Small sprayers for small vegetable farmers. In Proc. Fruit and Veg Expo, Syracuse. Jan. 22nd 2013 CCE, Geneva.

Landers A.J. (2013) Modernizing sprayers for optimal control of spotted wing drosophila. In Proc. Fruit and Veg Expo, Syracuse. Jan. 22nd 2013 CCE, Geneva.

Landers A.J. (2013) Precision spraying: using fine tuning and electronics. In Proc. Fruit and Veg Expo, Syracuse. Jan. 22nd CCE, Geneva.

Landers, A.J. (2013) Precision spraying. Handout: Lake Ontario Fruit Winter School, Lockport, Feb. 4th: Albion: CCE

Landers, A.J. (2013) Precision spraying. Handout: Lake Ontario Fruit Winter School, Wallington, Feb. 5th Albion: CCE

Landers, A.J. (2013) It doesn't matter what you spray if you don't get it on. In Proc. Viticulture 2013. Rochester. February 7th Geneva: Cornell University

Landers, A.J. (2013) Effective orchard spraying: logistics and technology Lake Champlain growers Feb. 11th

Landers, A.J. (2013) Innovations in sustainable spray technology. In Proc. Oregon grape growers annual meeting. Feb 20th

Landers, A.J. (2013) Effective vineyard spraying Workshop handbook. Oregon grape growers Feb 21st

Landers, A.J. (2013) Herbicide application technology In Proc. Double A and Milletello Lake Erie grape growers conference, Fredonia 26th Feb.

Landers, A.J. (2013) Target your sprays and save money In Proc. Double A and Milletello Lake Erie grape growers conference, Fredonia 26th Feb.

Landers, A.J. (2013) Better spray application. 28th Feb. a.m. Handout for WNY Crop growers Assoc.

Landers, A.J. (2013) Adjuvants 101. 28th Feb. pm Handout for Crop Protection Services, Hall.

Landers (2013) Sprays on target. Handouts, Vegetable growers in Orleans and Niagara counties. Lockport. 5th March. Lockport :CCE

Landers (2013) Intro to application technology. Handouts. FLCC IPM students 25th March

Landers (2013) Effective vineyard spraying . Handbook UK Vineyard Assoc workshop, 29th April. Lewes, UK

Landers (2013) Effective vineyard spraying Handbook. UK Vineyard Assoc workshop, May 1st Bristol UK

Landers (2013) Improving your grape sprayer Handouts. Lake Erie extension meeting, Westfield 8th May am.

Landers (2013) Improving your grape sprayer Handouts. Lake Erie extension meeting, North East 8th May pm.

Landers (2013) Turf and landscape spraying. Handouts:. Westchester, NY, 14th May.

Landers (2013) Developments in vineyard spraying. Handout, Finger lakes Grape growers meeting, Branchport 16th May.

Landers A.J. (2013) Multi row orchard spraying. Handout, Wayne Co. extension meeting, Alton, June 3rd.

Landers A.J. (2013) Vineyard Spraying, Handouts, FLCC viticulture students. Geneva. June 5th

Landers A.J. (2013) Vineyard sprayers. Handouts. Clinton County grape growers, June 10th

Landers A.J. (2013) Orchard twilight demo, Handout package. Peru Clinton County apple and grape growers June 10th

Landers A.J. (2013) Orchard twilight demo, Handout package. Washington County apple and grape growers June 11th

Landers, A.J. (2013) Effective vineyard spraying. Handouts for class. Niagara College, Canada Vit students, Niagara on the lake, 17th July

Landers, A.J. (2013) Effective Vineyard spraying - spraying practices. Handouts Thousand Island grape growers, Clayton 22nd July

Landers, A.J. (2013) Vineyard sprayers . Handout CU Grad students, Geneva, 23rd July

Landers, A.J. (2013) Automation in the orchard and vineyard. Proc. CU NYSAES Fruit Field Day, Geneva, Aug 1st

Landers, A.J. (2013) Grants for growers for better spraying Handout Fruit and Veg farmers on Long Island SWCDS Riverhead

Landers, A.J. (2013) Effective onion spraying Handouts Oswego onion growers, Oswego 15th Aug

Landers, A.J. (2013) Small sprayers for smaller vineyards Handouts. New entants to grape growing in Finger Lakes 22nd Aug.

Landers A.J. (2013) Effective vineyard spraying - Course handbook and memory stick . The great tour of Australian vineyards: 8 one-day workshops across Australia. Oct.1 -21

Landers A.J. (2013) Fruit spraying extension techniques Course book, handbook and handouts. NW Sare course. NYSAES, Geneva Nov 4th- 7th

Landers A.J. (2013) Spraying hops. On Presentation CD for NE Hop conference, SUNY Morrisville Dec 7th

Landers A.J. (2013) Recent advances in vineyard sprayer technology. New England Fruit and Veg conf. Manchester NH. Dec 19th

Landers, A.J. (2012) In workbook: Sprayer Tank Cleaning. Ohio Extension Educators, Columbus Ohio

Landers, A.J. (2012) Better Spray Application. Handouts for: Certified Crop Advisors, Syracuse, N.Y.

Landers, A.J. (2012) Tunnel Sprayers as a Way to Reduce Drift and the Pest Management Budgets. Oregon Grape Growers Via Webinar, OSU, Corvallis

Landers, A.J. (2012) Application Technology, Class Handouts, Entomology 240 Class, C.U. Ithaca, N.Y.

Landers, A.J. (2012) Fruit Spraying. Handout: Citrus Research Institute, Chongqing, China

Landers, A.J. (2012) Improving Spray Deposition in Fruit Crops- Airflow Adjustment Is the Answer. IUPAC Conference, Beijing, China

Landers, A.J. (2012) Challenges and Opportunities for Pesticide Application in Agriculture and Horticulture. Plenary Session Speaker. In Proc. IUPAC Conference, Beijing, China

Landers, A.J. (2012) Effective Vineyard Sprayers. Field Notes: Grape Growers, Ashtabula, OH

Landers, A.J. (2012) Sprayers On Target. Handouts:Vegetable Growers, Kinderhook, N.Y.

Landers, A.J. (2012) Spray Deposition at Twilight. Handouts, Hector Grape Growers, Hector, N.Y.

Landers, A.J. (2012) Effective Vineyard Spraying handout. Day 2 Vineyard Equipment Show and Demo, Anthony Road Winery, Penn Yan, N.Y.

Landers, A.J. (2012) Effective Vineyard Spraying handout, Day 1 Vineyard Equipment Show and Demo, Anthony Road Winery, Penn Yan, N.Y.

Landers, A.J. (2012) Spray Deposition At Twilight.Handout, Doyle Vineyard Management Team, Pulteney, N.Y.

Landers, A.J. (2012) Spray Deposition At Twilight Handouts, Niagara Region Growers, Niagara On The Lake, Canada

Landers, A.J. (2012) Effective Spraying of Vines. Course notes. Niagara College Students, Niagara On The Lake, Canada

Landers, A.J. (2012) The Cornell University Adjustable Air Louvre. Field notes, PWT Summer Tour, Watkins Glen, N.Y.

Landers, A.J. (2012) Spraying Fruit Crops. Handouts, Cornell University Graduate Students, Geneva, N.Y.

Landers, A.J. (2012) Effective Vineyard and Orchard Spraying. Handouts, Apple and Grape Growers, Winchester, Virginia

Landers, A.J. (2012) Sprayer Management. In Proc. Grape Growers Conference, Nova Scotia

Landers, A.J. (2012) Effective Vineyard Spraying Workshop. Course booklet, Grape Growers Conference, Nova Scotia

Landers, A.J. (2012) Effective Vineyard Spraying Workshop Course booklet, Oregon Grape Growers, Southern Oregon

Landers, A.J. (2012) Effective Vineyard Spraying Workshop. Course booklet, Oregon Grape Growers, Oregon

Landers, A.J. (2012) Herbicide Sprayers and Drift Reduction Plus the Role of Surfactants. Handouts, Finger Lakes Grape Growers, Geneva, N.Y.

Landers, A.J. (2012) Getting to Grips With Handheld Sprayers. Handouts, Organic Growers, Stanley, N.Y.

Landers, A.J. (2012) Achieving Good Coverage for Apple Scab Control. Course folder, Apple Workshop, Geneva, N.Y.

Landers, A.J. (2012) Spraying Efficiently for Fireblight-Improving Logistics. Course folder, Apple Workshop, Geneva, N.Y.

Landers, A.J. (2012) Pesticide Application Technology for Small Fruits. Handouts. Small fruit Growers of Broome County, Binghamton, N.Y.

Landers, A.J. (2012) Sprays On Target- The Challenge. Proc. Eastern Winery Exhibition, Lancaster, PA

Landers, A.J. (2012) Improving Spray Deposition and Reducing Drift in Vineyards. In Proc. Finger Lakes Grape Growers, Waterloo, N.Y.

Landers, A.J. (2012) Monitoring Spray Deposition. Handout., SCRI Cooperators, SWMREC, MI

Landers, A.J. (2012) Improving Spray Deposition- The Role of Droplets and Air- Grapes. In Proc. CD, Ontario Fruit and Vegetable Conference, Niagara Falls, Canada

Landers, A.J. (2012) Improving Spray Deposition- Getting Sprays on Target-In Proc. CD, Tender Fruit. Ontario Fruit and Vegetable Conference, Niagara Falls, Canada

Landers, A.J. (2012) Sprayers and Spraying Components to Protect Keuka and Seneca Lake Watersheds. Handouts. Yates and Seneca County Growers, Penn Yan, N.Y.

Landers, A.J. (2012) It's All To Do With Technique and Timing. Course book. Cool Climate Viticulture Conference, Hobart, Tasmania

Landers, A.J. (2012) Sprays On Target. Handouts. New Cornell University Applicators, Ithaca, N.Y.

Landers, A.J. (2012) Effective Fruit Spraying 1- Understanding Your Sprayer. Waste Not- Want Not- Methods of Improving Deposition and Reducing Drift. In Proc. Kentucky Horticulture Society, Lexington, KY

Landers, A.J. (2011) Will D'Alemberts paradox and the Audi R8Spyder help us in the Vineyard? Presentation handout, Cornell Research & Extension in Viticulture and Enology, November, Ithaca, NY

Landers, A.J. (2011) Developments in Application Technology. Course handouts, Ag Science 2940 Students, Cornell University, October, Ithaca, NY

Landers, A.J. (2011) Twilight Meeting Seeing is Believing. Demonstration and kit materials, Lake Erie Growers, 24th August, Portland, NY. p34 Portland, NY: CCE

Landers, A.J. (2011) EPA Project DRIFT A Method of Reducing Drift and Improving Deposition. Presentation handout, Lake Erie Summer Grape Growers Conference, 24th August, Portland, NY

Landers, A.J. (2011) Avancos na Tecnologia de Aplicacao de Fungicidas em Pomares e Vinhedos – demonstration handouts. Proterra Growers meeting, 19th August, Vacaria, Brazil

Landers, A.J. (2011) Avancos na Tecnologia de Aplicacao de Fungicidas em Pomares e Vinhedos – lecture with handouts, Proterra Growers meeting, 18th August, Vacaria, Brazil

Landers, A.J. (2011) Small Sprayers for Micro Vineyards. Presentation handouts, New Grape Growers, 11th August, Watkins Glen, NY

Landers, A.J. (2011) Monitoring Flow and Easy Steer with GPS in Orchards. Presentation handouts, Lake Ontario Fruit Tour, 3rd August, Watersport, NY

Landers, A.J. (2011) Airflow Adjustment for Improved Deposition. Presentation handouts, Lake Ontario Fruit Tour, 3rd August, Watersport, NY

Landers, A.J. (2011) Drift Reduction and a Twilight Meeting. Presentation handouts and kit materials, Lake Erie Grape Growers, 28th July, Portland, NY

Landers, A.J. (2011) New Developments in Fruit Spraying. Presentation handouts, PA Fruit growers at Horticulture Society, 27th July, North East, PA

Landers, A.J. (2011) Spraying Pesticides and Fertilizers. Presentation handouts, Mexican Vegetable Growers, 22nd July, Guadalajara, Mexico via internet

Landers, A.J. (2011) Effective Vineyard Spraying. Course notes and handouts, Missouri Grape Growers, 19th July, Missouri

Landers, A.J. (2011) Twilight Spraying Demonstration. Presentation and UV demonstration kit materials, Ontario Grape Growers, 7th July, Niagara on the Lake

Landers, A.J. (2011) Vineyard Spraying. Course and presentation handouts, Niagara College Students, 7th July, Niagara on the Lake

Landers, A.J. (2011) Vineyard Spraying. Course and presentation handouts, Cornell University Graduate Student Course, 30th June, Geneva, NY

Landers, A.J. (2011) Twilight Spraying Demonstration. Presentation materials and UV light kit, Long island Fruit Growers, 28th June, Cutchoque, Long Island

Landers, A.J. (2011) Effective Vineyard Spraying. Course handbook, Iowa Grape Growers, 25th June, DesMoines, Iowa

Landers, A.J. (2011) Effective Orchard Spraying. Course handbook, Midwest Fruit IPM courses, 24th June, LaCrosse, Wisconsin

Landers, A.J. (2011) Effective Vineyard Spraying. Course handbook, Midwest Fruit IPM courses, 23rd June, LaCrosse, Wisconsin

Landers, A.J. (2011) Vineyard Spraying. Course and presentation handouts, FLCC Students Course, 21st June, Geneva, NY

Landers, A.J. (2011) Twilight meeting- Seeing is Believing. UV light kit materials, Lake Erie Grape Growers at Millitellos, 26th May, Fredonia, NY

Landers, A.J. (2011) EPA Drift Project and Seeing is Believing. Presentation handouts and UV light kit materials, New Jersey Grape Growers, 11th May, Vineland, NJ

Landers, A.J. (2011) Twilight meeting- Seeing is Believing. Presentation handouts and UV light kit materials, Hudson Valley Apple and Grape Growers, 3rd May, Hudson Valley, NY

Landers, A.J. (2011) Preparing the Sprayer for the Season. Presentation handouts, Chemung Co. Farmers, 6th April, Horseheads, NY

Landers, A.J. (2011) International Application Technology. Course notes and handouts, Cornell University Entomology Students ENT 2410, 5th April, Ithaca, NY

Landers, A.J. (2011) Fascinating Developments in Horticulture Spraying. Course notes and handouts, Cornell University Applicators Update, 23rd March, Geneva, NY

Landers, A.J. (2011) Fascinating Developments in Horticulture Spraying. Course notes and handouts, Cornell University Applicators Update, 22nd March, Ithaca, NY

Landers, A.J. (2011) Sprayer modifications to improve deposition. In Lake Erie Region Grape Growers conference p36-37. Portland: Cornell Cooperative Extension

Landers, A.J. (2011) Spraying on Target. Presentation handouts, Ontario and Yates Co. Farmers, 8th March, Benton Center, NY

Landers, A.J. (2011) The answer is blowing in the wind: Airflow and traceability for precision spraying In Proc . 60th Annual Finger Lakes Grape Growers Conference , Holiday Inn, Waterloo, Penn Yan: Cornell Cooperative Extension

Landers, A.J. (2011) Preparing Your Sprayer for the Season. Presentation handouts, Ontario Co. Farmers, 3rd March, Monroe Tractors, Canandaigua, NY

Landers, A.J. (2011) Effective Spraying Part1 and Part2. Presentation handouts, Michigan Grape Growers, 24th February, Benton Harbor, MI

Landers, A.J. (2011) Effective Vineyard Spraying. Presentation and demonstration handouts, Australian grape Growers, 18th February, Hobart, Tasmania, Australia

Landers, A.J. (2011) Effective Vineyard Spraying. Presentation and demonstration handouts, Australian grape Growers, 9th February, Launceston, Tasmania, Australia

Landers, A.J. (2011) Matching the Sprayer to the Canopy- In Spanish. Conference handbook, Mid-Atlantic Fruit & Veg Conference-Apples, 2nd February, Hershey, PA

Landers, A.J. (2011) Matching the Sprayer to the Canopy- In English. Conference handbook, Mid-Atlantic Fruit & Veg Conference-Apples, 2nd February, Hershey, PA

Landers, A.J. (2011) Effective Sweet Corn Spraying. Conference handbook, Mid-Atlantic Fruit & Veg Conference- Corn, 1st February, Hershey, PA

Landers, A.J. (2011) The Answer is Blowing in the Wind: Airflow and Traceability for Precision Spraying. Conference handbook, Fruit and Veg Expo., 27th January, Syracuse, NY

Landers, A.J. (2011) The Devil is in the Detail: A Detailed View of Sprayer Adjustment. Presentation handouts, NY Apple Fruit School, 19th January, Wayne Co. NY

Landers, A.J. (2011) The Devil is in the Detail: A Detailed View of Sprayer Adjustment. Presentation handouts, NY Apple Fruit School, 18th January, Orleans Co. NY

Landers, A.J. (2011) Improving Your Old Sprayer. Presentation via Polycom from Geneva, To Washington County Farmers, 14th January, Geneva NY

Landers, A.J. (2011) Enhancing Pesticide Application in Turfgrass Production. Presentation handouts, Empire State Green Industry Show, 12th January, Rochester, NY

Landers, A.J. (2011) Improving Spray Deposition 2 –Getting Sprays on Target. Conference proceedings, Southeast Regional Fruit and Vegetable Conference- Peaches, 7th January, Savannah, GA

Landers, A.J. (2011) Improving Spray Deposition 1 – The role of Droplets and Air. Conference proceedings, Southeast Regional Fruit and Vegetable Conference- Peaches, 7th January, Savannah, GA

Landers, A.J. (2010) Not your Grandfather's Sprayer: How to Get the Best From Your Vegetable Sprayer- Workshop handbook . pp25, Great Lakes Fruit, Vegetable Expo – All Vegetables, 9th December, Grand Rapids, MI. MSU

Landers, A.J. (2010) Improving Spray Application: Fine Tuning the Sprayer. In Proc. Great Lakes Fruit, Vegetable Expo – Carrots, 8th December, Grand Rapids, MI

Landers, A.J. (2010) Applying Pesticides on Target: Improving Sprayer Performance. In Proc. Great Lakes Fruit, Vegetable Expo – Celery, 8th December, Grand Rapids, MI

Landers, A.J. (2010) Control of Onion Insects and Diseases. In Proc. Great Lakes Fruit, Vegetable Expo – Onions, 8th December, Grand Rapids, MI

Landers, A.J., Larzelere, W. and Muise, B. (2010) Precision fruit spraying: Adjusting liquid flow on the move. Poster presentation at SCRI grant Citrus Growers Field Day, 16th November, Clewiston, FL

Landers, A.J., Larzelere, W. and Muise, B. (2010) Precision fruit spraying: Adjusting air flow on the move. Poster presentation at SCRI grant Citrus Growers Field Day, 16th November, Clewiston, FL

Landers, A.J. (2010) Introduction to Crop Spraying. Course workbook. pp.25, Introduction to Agricultural Machinery(Ag Sci 2940), 21st October, Cornell University, Ithaca, NY

Landers, A.J. (2010) Vineyard Spraying. Course handouts, Cornell University Grad. Student Course, 17th August, NYSAES Geneva, NY

Landers, A.J. (2010) Effective Orchard and Vineyard Spraying. Presentation materials, WSU/OSU/CU SCRI planning meeting, 10th August, Asilomar, CA

Landers, A.J. (2010) Current Research in Orchard Spraying. Field day booklet, Cornell Fruit Field Days, 29th July, NYSAES Geneva, NY

Landers, A.J. (2010) Seeing is Believing. Presentation/demonstration, Information pack. Finger Lakes Grape Growers, 28th July, Bluff Point, NY

Landers, A.J. (2010) Current Research in Vineyard Spraying. Field day booklet, Cornell Fruit Field Days, 28th July, NYSAES Geneva, NY

Landers, A.J. (2010) Seeing is Believing. Information pack, Lake Erie Grape Program, Lake Erie Grape Growers, 21st July, Portland, NY

Landers, A.J. (2010) Vineyard Spraying. Course workbook, 25pp, Niagara College Students, 20th July, Niagara on the Lake Buffalo, NY

Landers, A.J. (2010) Application Technology Research at Cornell University. Presentation materials, North East Ag and Bio Engineers Conference (NABEC), 19th July, NYSAES Geneva,

Landers, A.J. (2010) Seeing is Believing. Information pack, Apple Growers, 15th July, Williamson, NY

Landers, A.J. (2010) Current Research and Extension in Application Technology. Presentation materials, ASEV Conference tour, 14th July, NYSAES Geneva, NY

Landers, A.J. (2010) Seeing is Believing. Information pack, Apple Growers, 13th July, Albion, NY

Landers, A.J. (2010) Vineyard Sprayers- Technology and Calibration. Workshop booklet, 25pp . FLCC Students, 6th July, NYSAES Geneva, NY

Landers, A.J. (2010) Developments Towards an Automatic Precision Sprayer for Fruit Crop Canopies. Presentation materials, ASABE Conference, 22nd June, Pittsburgh, PA

Landers, A.J. (2010) Effective Vineyard Spraying Course. Course workbook, 65pp , Grape Growers, 11th June, Wisconsin

Landers, A.J. (2010) Effective Orchard Spraying Course. Course workbook, 65pp, Apple Growers, 10th June, Wisconsin

Landers, A.J. (2010) Improving Pesticide Application in Vineyards - a workshop. Course workbook, 65pp. UK Vineyard Association, 21st May, UK

Landers, A.J. (2010) New Developments in Vineyard Spraying. Presentation materials, Finger Lakes Grape Growers meeting, 18th May, Bluff Point, NY

Landers, A.J. (2010) Autonomous Spraying- Results to Date. Presentation materials, SCRI Fruit and industry Meeting, 11th May, Lake Alfred, FL

Landers, A.J. (2010) Application Technology in the Orchard. Course materials, Cornell University Orchard Management Students, 28th April, Ithaca, NY

Landers, A.J. (2010) Dosavina- A Method of Optimising Spray Application. Information pack, Finger Lakes Grape Growers, 14th April, Ovid, NY

Landers, A.J. (2010) Improving Spraying Techniques. Presentation materials, Field Crop Farmers, 30th March, Cazenovia, NY

Landers, A.J. (2010) Improving Spray Deposition in Vineyards. Presentation materials, PA Pesticide Update, 17th March, Lancaster, PA

Landers, A.J. (2010) Recent Developments in Application Technology to Improve Deposition. Presentation handout, ESA- eastern section, 9th March, Annapolis, Maryland

Landers, A.J. (2010) Better Spraying. Presentation materials, VA Vineyard Association, 5th March, Charlottesville, VA

Landers, A.J. (2009) A Fixed Spray System for Fruit Crops. In Proc: 2009 New England Vegetable and Fruit Conference and Trade Show, pp 257-260, 16th December, Manchester New Hampshire

Landers, A.J. (2009) New Technology in Vineyard Spraying. In Proc: 2009 New England Vegetable and Fruit Conference and Trade Show, pp 237-240, 16th December, Manchester New Hampshire

Landers, A.J. (2009) Improving Deposition and Reducing Drift 1&2. In handouts and course notes, Apple Growers, 2nd December, Glastonbury, Ct.

Landers, A.J. (2009) The Autonomous Sprayer. Presentation handouts, SCRI 1st Field Day, 19th November, Devils Garden, Florida

Landers, A.J. (2009) In Pursuit of the Inevitable- The Development of a Robotic Fruit Sprayer. Presentation handouts, 3rd CRAVE meeting, 10th November, Ithaca New York

Landers, A.J. (2009) Sprays on Target. Presentation handouts, National Engineering Research Center for IT in Agriculture, 22nd October, Beijing China

Landers, A.J. (2009) New Technology in Vineyard Spraying. Presentation handouts, National Engineering Research Center for IT in Agriculture, 22nd October, Beijing China

Landers, A.J. (2009) Lake Erie Research and Extension in Spraying. Presentation handouts, Grape Growers, 25th August, Portland New York

Landers, A.J. (2009) Developments in Vineyard Spraying. Presentation handouts, Grape Growers, 19th August, Forestville New York

Landers, A.J. (2009) Sensor Weed Sprayer. Demonstration, NY Apple Growers, 23rd July, Williamson New York

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Landers, A.J. (2009) Effective Vineyard Spraying. Presentation handouts, Grape Growers, 27th June, Maryland

Landers, A.J. (2009) Penetration and Deposition. Presentation handouts, Invited Guests, 13th June, Branchport New York

Landers, A.J. (2009) Technology to Protect the Lakes from Pesticide Residue. Presentation handouts, Finger Lakes Grape Growers, 19th May, Valoise New York

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Landers, A.J. (2009) Spraying. Presentation handouts, Hudson Valley Orange Co., 12th May, New York

Landers, A.J. (2009) Good Spraying Practices. Course notes and handouts, FLCC Horticulture Students, 22nd April, NYSAES Geneva New York

Landers, A.J. (2009) Effective Orchard Spraying Course. Course notes and handouts, Apple Growers, 16th April, New Hampshire

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Landers, A.J. (2009) Fungicides- From Can to Canopy- The Role of the Engineer. Presentation handouts, Plant Pathology Seminar, 28th March, NYSAES Geneva New York

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Landers, A.J. (2009) Improving Spray Deposition. Presentation handouts, Apple Growers, 27th January, Virginia

Landers, A.J. (2009) New Developments in Improving Deposition Protecting the Environment and the Operator. Presentation handouts, Commercial pesticide Applicators, 22nd January, Randolph Vermont

Landers, A.J. (2009) Better Fruit Spraying. Presentation handouts, ANASAC Agronomists, 3rd to 15th January, Santiago Chile

Landers, A.J. (2009) Effective Spraying of Potatoes. Presentation handouts, Potato Growers, 3rd to 15th January, Orsano Chile

Landers, A.J. (2008) The answer is blowing in the wind. In handouts: CRAVE- the CU Viticulture Ag. Production week, 11th November, Ithaca N.Y., Cornell University

Landers, A.J. (2008) Effective application technology for vineyards. Handout presented at 16 vineyard meetings across Australia, October

Landers, A.J. (2008) Tank rinsing systems. Presented to: NEPSEC delegates, 9th September, State College, PA., Penn State University

Landers, A.J. (2008) Challenges facing specialty crop production. In handouts: National Agricultural Research, Extension, Education and Economics(NAREEE) Advisory Board Specialty Crop Committee, 4th September, Canandaigua, NY.

Landers, A.J. (2008) Introduction to vineyard sprayers. Course notes and demonstration: Cornell Grad. Students: summer class, 28th August, Geneva N.Y.
Geneva Experimental Station

Landers, A.J. (2008) Ten years of sprayer and harvester trials. In handouts: Lake Erie Grape Growers., 26th August, Fredonia, N.Y.

Landers, A.J. (2008) Vineyard equipment demo. In field presentations and handouts: Finger Lakes Grape Growers, 30th and 31st July, Dresden, N.Y. Sponsored by: Cornell University

Landers, A.J. (2008) Sprays on target. In handouts: Lake Ontario Fruit Growers, 17th July, Albion, N.Y.

Landers, A.J. (2008) Improving deposition and reducing drift. Course notes: Brock University and Niagara College students, 15th July, Niagara on the Lake, Niagara Falls, N.Y.

Landers, A.J. (2008) Strawberry sprays on target. In handouts: Northeast NY Strawberry Growers, 2nd July, Saratoga, NY

Landers, A.J. (2008) Orchard and vineyard sprayer demo. Demonstration handouts: New Jersey Fruit Growers, 26th June, New Jersey

Landers, A.J. (2008) Sprayer demo. Demonstration: Pennsylvania Fruit Growers, 25th June, Bilgerville, Pa.

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Landers, A.J. (2008) Technology to protect the lakes from pesticide residues. In Proc: Finger Lakes Grape Growers, 21st& 20th May, Bluff Point, N.Y.

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Landers, A.J. (2008) A pivotal position in orchards and vineyards. Handouts and course notes: NYSAES employees, 25th April, Geneva NY. Geneva Experimental Station

Landers, A.J. (2008) Effective vineyard spraying course NYFVI#5. In handouts and course notes: Grape Growers, 16th April, Riverhead

Landers, A.J. (2008) Effective orchard spraying course NYFVI#4. In handouts and course notes: Apple Growers, 14th April, Pultneyville

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Landers, A.J. (2008) Effective orchard spraying course NYFVI #2. In handouts and course notes: Apple Growers, 2th April, Lockport

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Landers, A.J. (2008) Results from the Lake Erie harvester trial. In Proc: Lake Erie Grape Conference, 26th March, Fredonia, N.Y.pp.20-23

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Landers, A.J. (2008) Berry pesticide application technology. In Proc: Berry Pest Management Workshop, 25th March, Geneva, N.Y.

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Landers, A.J. (2008) Preparing your sprayer for the forthcoming season. In handouts: Cayuga County Farmers, 11th March, Auburn, N.Y.

Landers, A.J. (2008) Reducing drift and environmental pollution. In handouts and course notes: Training group, Long Island, 10th March, via Polycom and Geneva group

Landers, A.J. (2008) Precision fruit spraying. In handout: Washington State Fruit Growers, 4th March, Biglerville, PA.

Landers, A.J. (2008) Drift forensics. In Proc: AAPCO, 3rd March, Washington DC

Landers, A.J. (2008) New sprayer technology. In handouts: Nova Scotia Growers, 26th February, Kentville

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Landers, A.J. (2008) Summary of hi-tech sprayer performance research. In Proc: NY Fruit and Vegetable Expo, 13th February, Syracuse, NY 1p.3

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Landers, A.J. (2007) Effective pesticide application for vineyard sprayer operators.
Course handbook for the NYFVI course. Geneva: Cornell University

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