

**Annual Meeting**  
Cornell University  
Ithaca, NY 14853  
June 11-12, 2008

**Multistate Research Project**  
**Annual Station Publications Report**

PROJECT NUMBER: NE-1017

TITLE: Developing and Integrating Components for Commercial Greenhouse  
Production Systems

PROJECT DURATION: October 1, 2003 to September 30, 2008

REPORTING PERIOD: June 1, 2007 to May 31, 2008

REPORT DATE: June 10, 2008

PUBLICATIONS:

**Dissertations, Theses (Published)**

Sabeh, N.C. (Advisor: **G. Giacomelli, C. Kubota**, committee member) 2007. *Evaluating and Minimizing Water Use by Greenhouse Evaporative Cooling Systems in a Semi-Arid Climate*. Ph.D. Dissertation University of Arizona.

Setiawan, A. 2008. Fault Detection and identification in a deep-trough hydroponic plant system using adaptive neuro-fuzzy systems. Cornell University Libraries, Ithaca, NY. 145 pp.

**Books (Published)**

None

**Book Chapters (Published)**

Both, A.J. and D.R. Mears. 2008. Building and maintaining greenhouses for energy savings. In 'Horticulture: Principles and Practices', 4th ed. by G. Acquaah; included in Chapter 12 'Controlled-Environment Horticulture'. Prentice Hall, Inc. Upper Saddle River, NJ. pp. 406-417.

Both, A. J. 2007. Controlled environment agriculture/Greenhouse production. In Encyclopedia of Agricultural, Food, and Biological Engineering; Heldman, D., Ed.; Taylor & Francis Group: New York.  
<http://www.informaworld.com/10.1081/E-EAFE-120043033>.

Burnett, S.E. and M.W. van Iersel. 2008. Watering, Irrigation Systems, and Control. In: K. Williams (ed.). Water and Nutrient Management for Floriculture Crops, 2<sup>nd</sup> ed. Ball Publishing, West Chicago, Ill. (In Press).

van Iersel, M. 2007. La gestione della fertilizzazione nei sistemi con subirrigazione (Fertilizer management in subirrigation systems). In: P. Santamaria (ed.) I sistemi di allevamento in vaso con subirrigazione a ciclo chiuso. p. 53-65. Aracne editrice, Rome, Italy (ISBN 978-88-548-1190-4).

### Refereed Journal Articles (Published)

- Both, A.J., E. Reiss, J.F. Sudal, K.E. Holmstrom, C.A. Wyenandt, W.L. Kline, and S.A. Garrison. 2007. Evaluation of a manual energy curtain for tomato production in high tunnels. *HortTechnology* 17(4):467-472.
- Buck, J.S., C. Kubota, and M. Jensen. 2008. Effect of mid-day reduction of high electrical conductivity treatment on the yield and quality of greenhouse cherry tomato. *HortTechnology* 18:460-466.
- Burnett, S.E. and M.W. van Iersel. 2008. Water use efficiency and morphology of *Gaura lindheimeri* 'Siskiyou Pink' grown in capacitance sensor controlled irrigation. *HortScience* 43:1555-1560. MAFES Publication #2977.
- Burnett, S.E., D. Zhang, L.B. Stack, and Z. He. 2008. Effects of phosphorus on morphology and foliar nutrient concentrations of hydroponically-grown *Scaevola aemula* R. Br. 'Whirlwind Blue'. *HortScience* 43:902-905. MAFES Publication #2996.
- Eyles, A., R. Chorbajian, C. Wallis, R. Hansen, D. Cipollini, D. Herms and P. Bonello. 2007. Cross-induction of systemic induced resistance between an insect and a fungal pathogen in Austrian pine over a fertility gradient. *Oecologia* 153: 365-374.
- Frantz, J.M., N.N. Cometti, M.W. van Iersel, and B. Bugbee. 2007. Rethinking acclimation of growth and maintenance respiration of tomato in elevated CO<sub>2</sub>: effects of a sudden change in light at different temperatures. *Journal of Plant Ecology* 31:695-710.
- Gazula, A., Kleinhenz, M. D., Scheerens, J. C., and Ling, P. P. 2007. Anthocyanin levels in nine lettuce (*Lactuca sativa*) cultivars: influence of planting date and relations among analytic, instrumented and visual assessments of color. *HortScience* 42(2):232-238.
- Gent, M.P.N. 2007. Effect of shade on quality of greenhouse tomato. *Acta Horticulturae* 747:107-112.
- Gent, M.P.N. 2008. Density and duration of shade affect water and nutrient use in greenhouse tomato. *J. Amer. Soc. Hort. Sci.* (in press).
- Glynn C., D.A. Herms, C.M. Orians, R.C. Hansen and S. Larsson. 2007. Testing the growth-differentiation balance hypothesis: dynamic responses of willows to nutrient availability. *New Phytologist* 176(3): 623-634.
- Kim, H-J., J.M. Fonseca, J-H. Choi, and C. Kubota. 2007. Effect of hydrogen peroxide on quality of fresh-cut tomato. *J. Food Sci.* 72:463-467.
- Kim, H.J., J.M. Fonseca, J.H. Choi, and C. Kubota. 2007. Effect of methyl jasmonate on phenolic compounds and carotenoids of romaine lettuce (*Lactuca sativa* L.). *J. Agric. Food Chem.* 55:10366-10372.

- Kim, H.J., J.M. Fonseca, J.H. Choi, C. Kubota, and D.Y. Kwon. 2008. Salt in irrigation water affects the nutritional and visual properties of romaine lettuce (*Lactuca sativa* L.). *J. Agric. Food Chem.* 56:3772–3776.
- Kirnak, H., H.M. Keener, R.C. Hansen and T.H. Short. 2007. Dynamic modeling of tension-controlled irrigation of container-grown nursery plants. *Transactions of the ASAE* 50(6): 2247-2254.
- Montesano, F., and M.W. van Iersel. 2007. Calcium can prevent toxic effects of Na<sup>+</sup> on tomato leaf photosynthesis, but does not restore growth. *Journal of the American Society for Horticultural Science* 132:310-318.
- Nemali, K.S. and M.W. van Iersel. 2008. Physiological responses to different substrate water contents: screening for high water-use efficiency in bedding plants. *Journal of the American Society for Horticultural Science* 133:333-340.
- Nemali, K.S., F. Montesano, S.K. Dove, M.W. van Iersel. 2007. Calibration and performance of moisture sensors in soilless substrates: ECH<sub>2</sub>O and Theta probes. *Scientia Horticulturae* 112:227-334.
- Tignor, M.E., S.B. Wilson, G.A. Giacomelli, C. Kubota, E. Fitz-Rodriguez, T.A. Irani, E.B. Rhoades, and M.J. McMahan. 2007. Multi-institutional cooperation to develop digital media for interactive greenhouse education. *HortTechnology* 17:397-399.
- Wallis, C., A. Eyles, R. Chorbajian, B. McSpadden Gardener, R. Hansen, D. Cipollini, D. A. Herms and P. Bonello. 2008. Systemic induction of phloem secondary metabolism and its relationship to resistance to a canker pathogen in Austrian pine. *New Phytologist* 177 (3): 767–778.
- Wu, M., and C. Kubota. 2008. Effects of high electrical conductivity of nutrient solution and its application timing on lycopene, chlorophyll and sugar concentrations of hydroponic tomatoes during ripening. *Scientia Hort.* 116:122–129.
- Wu, M., and C. Kubota. 2007. Effects of electrical conductivity of hydroponic nutrient solution on leaf gas exchange of five greenhouse tomato cultivars. *HortTechnology* 18:271-277.

### **Symposium Proceedings Articles (Published)**

- Berghage, A. Jarrett, and F. Rezai, 2008. Stormwater benefits of green roofs and the relative contribution of plants. In NOWRA 17<sup>th</sup> Annual Technical Education Conference & Exposition, Memphis TN. Paper XIII-Werf-08-39.
- Berghage, R., A. Wolf, and C. Miller. 2008 Testing green roof media for nutrient content. In Proceeding Greening rooftops for sustainable communities conference Baltimore, MD.
- Berghage, R, D. Beattie, A. Jarrett, T. and O'Connor. 2007. Greenroof runoff water quality. In Proceeding of Greening rooftops for sustainable communities, Mineapolis MN.
- Both, A.J., D.R. Mears, T.O. Manning, E. Reiss, P.P. Ling. 2007. Evaluating energy savings strategies using heat pumps and energy storage for greenhouses. ASABE paper No. 07-4011. ASABE, 2950 Niles Road, St. Joseph, MI 49085-9659, USA. 16 pp.

- Brechner, M. L., L. D. Albright and L. A. Weston. 2007. Impact of variable light intensity at a constant light integral: effects on biomass and production of secondary metabolites by *Hypericum perforatum*. *Acta Hort.* 756:221-228
- Burnett, S. 2007. New misters for propagation: Automation and water quality issues. *Proc. International Plant Propagator's Society.* (In Press).
- Gent, M.P.N. 2007. Using Forced Air Heat to Warm the Soil. *Proceedings New England Vegetable and Fruit Conference, Manchester NH*, p 97-100.
- Giacomelli, G. 2008. Controlled Environment Opportunities...Its not just tomatoes but a technology platform that will enhance the quality of life. *Proceedings of the 34th Agricultural Plastics Congress, American Society for Plasticulture.* Invited speaker.
- Giacomelli, G, N. Castilla, E.J. van Henten, D.R. Mears, and S. Sase, 2007. Innovations in Greenhouse Engineering. *International Conference on High Technology for Greenhouse Systems Management (GreenSys2007), October 4-6, Naples, Italy.* *ActaHorticulture* (In press)
- Kubota, C. 2008. Use of grafted seedlings for vegetable production in North America. *Acta Horticulturae* (in press).
- Lovichit, W., C. Kubota, C.Y. Choi, and J. Schoonderbeek. 2007. Greenhouse water recovery system for crop production in semi-arid climate. *ASABE Paper No. 074012. St. Joseph, Mich.:ASABE*
- Lovichit, W., C. Kubota, C. Choi, and G.G. Schoonderbeek. 2008. Feasibility study for water recovery system for pad-and-fan cooled greenhouse in semiarid climate. *Acta Horticulturae* (in press).
- Matsuda, R., C. Kubota, L.M. Alvarez, and G.A. Cardineau. 2008. Growth, development, and protein productivity of transgenic tomato plants expressing a *Yersinia pestis* antigen fusion protein F1-V in a greenhouse. *Acta Horticulturae* (in press).
- Tabares, P. J. Srebric and R. Berghage. 2007. Thermal performance of a lightweight tray for the greenroof growing media. In *Proceeding of Greening rooftops for sustainable communities, Mineapolis MN.*
- Takahashi, Noriko, Peter P. Ling, Michael Klingman, and Jonathan M. Frantz. 2007. System Approach for Improved Whole Canopy Photosynthesis Measurement. *Japanese Society of Agricultural, Biological, and Environmental Engineers and Scientists 2007 conference, June 25-27, Sakai, Osaka, Japan. Paper number: B31-6, pp184-185. Peer Reviewed.*
- van Iersel, M.W., J.G. Kang, and S. Burnett. 2007. Making greenhouse irrigation more efficient: Effects of substrate water content on the growth & physiology of *vinca* (*Catharanthus roseus*). *Proc. Southern Nurs. Assn. Res. Conf.* 52:92-96.

### **Popular Articles (Published)**

- Albright, L. D. 2008. Light management for controlled-environment agriculture. *Photonics Spectra* 42(3):49-54.
- Both, A.J.. 2008. Maintain ventilation equipment before warm weather starts. *Greenhouse Management and Production (GMPro).* April issue. pp. 21-24.

- Both, A.J. and E. Reiss. 2007. Consider design with a new floor heating system. *Greenhouse Management and Production (GMPro)*. December issue. pp. 35-37.
- Both, A.J. 2007. Greenhouse cooling basics. *American Nurseryman*. September 15 issue. pp. 20-24.
- Both, A.J. 2007. Maintain temperatures with evaporative cooling. *Greenhouse Management and Production (GMPro)*. April issue. pp. 39-42.
- Burnett, S. and M. van Iersel. 2007. Better crops, less water. Irrigation automation can make a healthier plant using less water and with less leaching. *Greenhouse Grower* 25(8):66, 68, 70.
- Holcomb, E.J., R. Berghage and K. Shumac. 2008. Placement of Slow-Release Fertilizer. *Grower Talks* 71(11):52-54.
- Montesano, F., M. van Iersel, and P. Santamaria. 2007. Così si può controllare la fertilizzazione in serra. (Translated title: This is how it is possible to control fertilization in greenhouses) *Colture Protette. Orticoltura e floricoltura* 36(2):21-30.
- van Iersel, M. and S. Burnett. 2007. Using soil water sensors for efficient irrigation in greenhouses. *Gauging the Green* 1(1): 2, 3, 6.

### **Presentations (Papers)**

- Brechner, M.L., L.D. Albright and L.A. Weston. 2007. Impact of differing light integrals at a constant light intensity: effects on biomass and production of secondary metabolites by *Hypericum perforatum*. Paper No. 070416. ASABE, St., Joseph, MI. 8 pp.
- Burnett, S., D. Zhang, L. Stack, and Z. He. 2007. Effects of phosphorus on morphology of *Scaevola aemula* R. Br. 'Whirlwind Blue'. *HortScience* 42:874 (Abstract).
- Fang, W., D. Mears, and A.J. Both. 2007. Story of air-inflated double-layer polyethylene greenhouse and its recent applications in Taiwan. International Seminar on Agricultural Structures and Agricultural Engineering (IS-ASAE). National Taiwan University, Taipei, Taiwan, R.O.C. December 8th-9th, 2007. 6 pp.
- Fulcher, A., R. Geneve, and J. Norikane. 2007. Photosynthetic Characterization and Water-use Efficiency of *Hibiscus rosa-sinensis*. Poster No. 388. Presented at the 104<sup>th</sup> Annual Conference of the American Society for Horticultural Science, Scottsdale, Arizona, July 16-19. ASHS, 113 South West Street, Suite 200, Alexandria, VA 22314-2851.
- Gent, M.P.N. 2007. A dynamic linear model of water content and movement in whole plants. (Abstract) ASA meeting, New Orleans, LA, November 2007
- Gent, M.P.N. 2008. Effect of shade on water and nutrient use in greenhouse tomato. (Abstract) NE regional ASHS meeting, New Brunswick NJ, January 2008. *HortScience* 43(3):591.
- Giacomelli, G, N. Castilla, E.J. van Henten, D.R. Mears, and S. Sase, 2007. Innovations in Greenhouse Engineering. International Conference on High Technology for Greenhouse Systems Management (GreenSys2007), October 4-6, Naples, Italy. [invited keynote] *ActaHorticulture In press*
- Giacomelli, G, 2008. Science Cafe: Tomatoes on the Moon: CE Technologies. Presentation for Flandrau Science Center. 1 1/2 hours. Feb 4th. 100 attendees

- Hill, J. 2007. Dynamic Modeling of Tree Growth and Energy Use in a Nursery Greenhouse. Poster paper presented at annual meeting of American Society for Horticultural Science, Scottsdale, AZ.
- Kacira, M., S. Sase, A. Ikeguchi, M. Ishii, G. Giacomelli and N. Sabeh. 2007. Effect of vent configuration and wind speed on three dimensional temperature distributions in a naturally ventilated multi-span greenhouse by wind tunnel experiments. International Conference on High Technology for Greenhouse Systems Management (GreenSys2007), October 4-6, Naples, Italy. [oral presentation] (*ActaHorticulture In press*)
- Licamele, J, G. Giacomelli and K. Fitzsimmons, 2008. Nitrogen Dynamics and Biomass Production of an Aquaponics System. Meeting of the World Aquaculture Society, Orlando, Florida. Session: Aquaponics and Farm Integration. Presentation by J. Licamele. February 9-12.
- Ling, P. P., and N. Takahashi. 2007. Considerations of whole canopy photosynthesis measurement. April 16. NCR-101 Meeting, Tuskegee, AL.
- Ling, P. P. 2007. An overview of plant sensing and control program. Wageningen, Netherlands. August 30.
- Ling, P. P. 2007. Greenhouse Production Efficiency: elevate the end user, elevate the use. National Greenhouse Manufacturer Association. Palm Beach, FL. April 23-24.
- Nemali, K., D. Radcliffe, and M. van Iersel. 2007. Plant available water and pore size distribution in soilless substrates. *HortScience* 42:1003 (abstract).
- Nemali, K. and M. van Iersel. 2007. Physiological responses of tomato to different rates of drought stress. *HortScience* 42:849 (abstract).
- Ogden, A., G. Krewer, and M.W. van Iersel. 2007. High tunnels trigger earlier flowering and fruit set in organic southern highbush blueberry. *HortScience* 42:860 (abstract).
- Reinhardt, W.R. and L.D. Albright. 2007. Energy, greenhouse gases and production agriculture in New York State. Proceedings, 2007 ACEEE Summer Study on Energy Efficiency. pp. 3-123 to 3-134.
- Takahashi N., P. P Ling and J. Frantz. 2007. Considerations for Accurate Whole Plant Photosynthesis Measurement. Paper No. 074015. ASABE Annual International Meeting, Minneapolis, Minnesota, June 17-20.
- Takahashi, N. and P. P. Ling. 2007. Improvement of whole plant photosynthesis measurement. Northeast Agricultural and Biological Engineering Conference. July 29- August 1.
- van Iersel, M., Kang, and S. Burnett. 2007. Irrigation scheduling in greenhouses: substrate water content effects on growth and physiology of vinca (*Catharanthus roseus*). *HortScience* 42:889 (abstract).

### **Other Creative Works**

- Berghage, R., A. Jarrett, D. Beattie, K. Kelley, S. Husain, F. Rezai, B. Long, A. Negassi, R. Cameron and W. Hunt. 2007. Quantifying evaporation and transpirational water losses from green roofs and green roof media capacity for neutralizing acid rain. National Decentralized Water Resources Capacity Development Project (NDWRCP) 04-DEC-10SG.
- Both, A.J. 2007. Greenhouse Ventilation. Proceedings of the Annual NJ Vegetable Growers' Association Meeting. January 16-18. Atlantic City, NJ. pp. 76-79.

Brennan, M., D. Specca, B. Schilling, D. Tulloch, S. Paul, K. Sullivan, Z. Helsel, P. Hayes, J. Melillo, B. Simkins, C. Phillipuk, A.J. Both, D. Fennell, S. Bonos, M. Westendorf, and R. Brekke. 2007. Assessment of biomass energy potential in New Jersey. New Jersey Agricultural Experiment Station Publication No. 2007-1. Rutgers, the State University of New Jersey, New Brunswick, NJ.

Rabin, J. and A.J. Both. 2007. NJ agricultural at a glance - Floriculture. In *Sustaining Farming on the Urban Fringe*. NJAES. December Issue.

#### Extension Publication

N. Sabeh, and G. Giacomelli, 2008. Evaporative Cooling Water Use. University of Arizona Cooperative Extension Fact Sheet.

Microalgae for Sequestration of Carbon dioxide and wastewater treatment, November 2007. Final white paper report by Drs. Keesung Kim, G. Giacomelli and J. Cuello for Southwestern Power Group.

Plant Production in Greenhouse for Long Term Terrestrial Carbon Sequestration, June 2007. Final white paper report by Drs. Keesung Kim, C. Kubota and G. Giacomelli for Southwestern Power Group.

#### Websites

The University of Arizona Controlled Environment Agriculture Center home page:

<http://ag.arizona.edu/ceac>

Tomato Live! Website: <http://ag.arizona.edu/ceac/tomlive/index.htm>

Greenhouse education materials repository: <http://badger.uvm.edu/dspace/handle/2051/1924>

Growing Hydroponic Tomatoes <http://ag.arizona.edu/hydroponictomatoes/>

#### **Workshop Sponsor**

Greenhouse Crop Production and Engineering Design Short Course. Eye on Economics, January 21-23, 2008. Continuing professional education short course, University of Arizona. Included a tour to EuroFresh Farms (Willcox, AZ). L. Perkins, E. Casey, G. A. Giacomelli, C. Kubota, M. Kacira, P. Rorabaugh, M. Jensen, and M. Kroggel. 150 participants.

Evaporative Cooling Workshop. May 30, 2007. Educated public about greenhouse evaporative cooling systems and how to maximize their effectiveness and reduce water and energy use through design and operation. N. Sabeh and G.A. Giacomelli. 75 participants.

Greenhouse and Power Plants Workshop. January 24, 2008. University scientists, local energy providers (Tim McDonald of APS), and economic development interests gathered to discuss APS representative to discuss interest in greenhouse applications adjacent to power plants for improving resource (heat, CO<sub>2</sub>, water) utilization, and for the subsequent economic development that would arise for Arizona, with focus on synergistic relationship of power plants and proven CEA technologies. Supported by Drs. M. Kacira, and G. Giacomelli. The University of Arizona, CEAC. 25 participants.

ASHS 07 Post-Conference Tour, July 25, 2007. Tour and presentations to UA-CEAC facilities and EuroFresh Farms, Inc for the American Society for Horticultural Science. Drs C. Kubota, M. Kacira, and G. Giacomelli.

ISHS Workshop, October 20-24, 2008. ISHS International Workshop on Greenhouse Environmental Control and Crop Production in Semi-Arid Regions will be held in Tucson. Organizing committee: Drs C. Kubota, M. Kacira, and G. Giacomelli.

Melon Grafting Workshop, May 5, 2007. Organized a hands-on workshop for students, faculty and staff at UA-CEAC. C. Kubota.

Sustainable Greenhouse Workshop. November, 2007. Manchester, ME. L. Stack and S. Burnett

Greenhouse Management Workshop – Environmental Control. Feb 26-27, 2008. Wooster, OH 44691. This 2-day workshop attracted 65 participants. P. Ling.

### **Workshop Participant**

Both, A.J. 2007. Optimizing plant growth through environmental control. Agricultural Structure and Environment Seminar No. 34. Hiroshima Prefecture Agricultural Research Center. Organized by the National Institute for Rural Engineering, Tsukuba, Japan. December 13, 2007.

Both, A.J. 2007 Technologies for greenhouse energy conservation. 25<sup>th</sup> Anniversary Perennial Plant Symposium organized by the Perennial Plant Association, Columbus, OH. August 9, 2007.

Both, A.J. 2007. Surviving the energy crisis part 3: Conservation in the greenhouse. OFA Short Course, Columbus, OH. July 14, 2007.

Burnett, S.E. 2007. Sustainable Irrigation Practices. November, 2007. Sustainable Greenhouse Production Workshop, Manchester, ME.

Giacomelli, G. 2008. Introduction of Controlled Environment Agriculture Research Center. Computational Fluid Dynamics for Greenhouses and Biosystems Modeling Workshop, Autonomia University of Querétaro, Mexico, January 12-18. (*Invited speaker*)

Giacomelli, G. 2008. Controlled Environment Agriculture Greenhouse Display Booth. Presented at the CleanTech Forum, San Francisco, CA 02/25/2008. Collaborators: M. Munday and R. J. Richman.

Giacomelli, G. 2008. Controlled Environment Opportunities....It's not just tomatoes. Invited presentation to the AAAS-SWARM southwest and rocky mountain division of AAAS by the Sandia National Laboratory and the University of New Mexico. April 11.

Giacomelli, G., 2008. New Developments in Controlled Environment Agriculture. Presentation at the 2nd Annual Southwest Ag Summit Conference. Yuma Fresh Vegetable Association and the University of Arizona.

Giacomelli, G., 2007. Engineering Principles Impacting High Tunnel Environments, ASHS High Tunnel Workshop, Scottsdale, Arizona. July 19th. Invited presentation.



- Kacira, M. 2008. Computational Fluid Dynamics (CFD) applications for greenhouse climate predictions. Computational Fluid Dynamics for Greenhouses and Biosystems Modeling Workshop, Autonomia University of Querétaro, Mexico, January 12-18. (*Invited speaker*)
- Mears, D.R. 2007. Energy for protected cultivation (greenhouse energy conservation and alternatives). Agricultural Structure and Environment Seminar No. 34. Hiroshima Prefecture Agricultural Research Center. Organized by the National Institute for Rural Engineering, Tsukuba, Japan. December 13, 2007.

### **Refereed Journal Articles (Pending)**

- Chorbadjian, R., A. Eyles, C. Wallis, R. Hansen, D. Cipollini, P. Bonello and D. Herms. 2008. Fertility effects on growth and foliage chemistry of Austrian pine and European pine sawfly performance: a test of the growth/differentiation balance hypothesis. (internal review)
- Giacomelli, G., 2007. Engineering Principles Impacting High Tunnel Environments, HortTechnology (in press)
- Hale, B.K., D.A. Herms, R.C. Hansen and T.P. Clausen. 2008. Comparison of the effects of intermittently and constantly applied drought stress on growth and secondary metabolism of poplar. (internal review)
- Keesung, K., G. A. Giacomelli, S-W Nam and, J-E, Son. CFD Modeling to Improve the Design of a Fog System for Cooling Greenhouses. *Transactions of the ASAE*
- Kubota, C., M.A. McClure, N. Kokalis-Burelle, M.G. Bausher, and E.N. Roskopf. 2008. Vegetable Grafting: History, Use, and Current Technology Status in North America. HortScience. (in press)
- Lee, M.K. and M.W. van Iersel. 2008. Sodium chloride effects on growth, morphology, and physiology of chrysanthemum (*Chrysanthemum × morifolium*). *HortScience* (in press).
- S. Sase, M. Kacira, T. Boulard, L. Okushima. 2008. Determination of Porosity Parameters for Tomato Canopy: An experimental study in a wind tunnel. *Agriculture and Forest Meteorology* (*In review*)
- Takahashi, N., Ling, P. P., and Frantz, J. M. 2008. Considerations for Accurate Whole Plant Photosynthesis Measurement. Environmental Control in Biology. Accepted for publication.