

Acknowledgments

The Editor and the Board of Directors of the Southern Nursery Association wish to express their sincere appreciation to Sandra Wilson, Greg Eaton, Jason Oliver, Steven Jeffers, Glenn Fain, Donna Fare, Cecil Pounders, Joseph Neal, Thomas Ranney, Forrest Stegelin, Samuel Dennis, Sandra Reed and Steve Carver for the fine job they did as Section Editors and Moderators. Our special thanks go to Amy Wright who edited and moderated the Student Competition Section and to Kim Powell organized the Poster Section on very short notice. Thanks, also, to Anthony V. Lebude and Nick Gawel who operated the computers and made the PowerPoint presentations run smoothly.

We would like to extend our gratitude to all the researchers and nurserymen who attended the 49th Annual Conference and/or contributed to these Proceedings and continue to make this annual event an industry success.

Notice

Mention of a trademark name on a proprietary product does not constitute a guarantee and/or warranty of the product by the researcher(s) or their respective universities or the Southern Nursery Association and does not imply its approval to the exclusion of other products that may also be suitable.

Permission to reprint articles and quotations of portions of this publication is hereby granted on condition that full credit be given to both the author(s) and the publication, Proceedings of the SNA Research Conference, along with the date of the publication.

The Southern Nursery Association is not responsible for the statements and opinions printed in the Proceedings SNA Research Conference; they represent the views of the author(s).

Using Research Data Safely And Effectively

Good research is conducted under an exact set of controlled conditions, varying only the specific treatments which are to be evaluated. Results from the specific treatments are directly applicable to your operations only if all the conditions in your operation are controlled the same as in the research. Unfortunately, this seldom happens. However, this does not mean that you cannot benefit from the research. What it does mean is that you should use the research information on a trial basis if your plant species, soil type, watering method, size and age of plant, climatic region, etc. is different than that described by the researcher.

What an alert grower should expect to gain from these research reports is ideas — ideas as to the best control for insects, disease, nematodes and weeds — labor saving ideas such as chemical pruning and using growth regulators to minimize maintenance. Also, ideas on water management, nutrition, alternative growing media, new plants for landscaping and guides for improving profits and marketing skills can also be found.

Should you desire additional information on any report, please write to the author. We would like to extend an invitation to you to attend all sessions of the SNA Research Conference held in Atlanta each year in conjunction with *The World's Showcase of Horticulture*®.



49th Annual
Southern Nursery Association

Research Conference Proceedings 2004

Southern Nursery Association, Inc.
Danny Summers, Executive Vice President
1827 Powers Ferry Rd SE, Suite 4-100
Atlanta, GA USA 30339-8422
Voice: 770.953.3311 Fax: 770.953.4411
Email: mail@sna.org
Website: www.sna.org

Proceedings of the SNA Research Conference are published annually by the Southern Nursery Association. One copy is provided at no charge to all SNA members, horticultural libraries and contributing authors. The SNA Research Proceedings from 1990-present is also available for purchase on CD-Rom.

It is the fine men and women in horticultural research that we, the Southern Nursery Association, pledge our continued support and gratitude for their tireless efforts in the pursuit of the advancement of our industry.

Additional Publication Additional Copies:

SNA Members	\$25.00*
Horticultural Libraries	\$25.00*
Contributing Authors	\$25.00*
Non-Members	\$40.00*

CD-Rom Additional Copies:

SNA Members	\$15.00*
Horticultural Libraries	\$15.00*
Contributing Authors	\$15.00*
Non-Members	\$20.00*

*includes shipping and handling

© Published December, 2004

The Porter Henegar Memorial Award for Horticultural Research



*Dr. Austin K. Hagan (left)
with Stuart Warren (right).*

The Southern Nursery Association (SNA) has honored Stuart Warren, Department of Horticultural Science of North Carolina State University, with the Porter Henegar Memorial Award during the 49th Annual SNA Research Conference held in conjunction with SNA's Annual Meeting and Convention in Atlanta, GA. Dr. Austin K. Hagan, a faculty member at Auburn University and winner of the award last year, made the presentation to Warren during the SNA Research Conference.

Originally known as the Research Award of Merit, the recognition was created in 1968 to honor those individuals who have made outstanding contributions to ornamental horticulture research. In 1972, the award was renamed the Porter Henegar Memorial

Award in honor of one of SNA's former Executive Secretaries. SNA's Director of Research Dr. Bryson L. James and past award winners make nominations each year.

Warren began a PhD graduate program at N.C. State University in 1982, working with Dr. Walt Skroch, finishing his degree in 1986. In 1987, Dr. Stuart Warren was hired by N.C. State University to conduct groundcover management in field-grown nursery stock and weed, water and nutrient management studies of containerized plant production in Western North Carolina at the Mountain Horticulture Crops Research and Extension Center, Fletcher, N.C. In 1989, he and his family moved to Raleigh, and Warren began teaching Landscape Maintenance and Tree and Grounds Maintenance courses in the 2- and 4-year programs while continuing his research program. From 1994 to 1996, he carried a 3-way appointment with ornamental extension weed management responsibilities. Dr. Warren also served as the Director of Graduate Programs from 1997 to 2001 for the Department of Horticultural Science at N.C. State University.

Warren is a premier teacher. He received a University Outstanding Teacher Award in 1992 and is a member of his University's Academy of Outstanding Teachers. In 1996, he received the National Association of Colleges and Teachers of Agriculture (NCTA) Teacher Fellow Award.

One of his greatest extra curricular contributions to students has been as a coach and adviser of the Associated Landscape Contractor's of America Student Career Days competition team. For the past 14 years, he has coordinated the formation, organization, fund raising and preparation of 18-40 students as a team that travels to and participates in this national event. Since 1999 he has been involved in taking students to the United Kingdom, France, Italy, Spain and other countries on two-week trips with 10-12 students. The students receive one credit for their participation in the "travel course."

The Bryson L. James Student Research Competition 2004 Awards

This long-standing program was renamed in August 1989, in honor of Dr. Bryson L. James, Director of Horticultural Research for the Southern Nursery Association. As Dr. James has been an active participant and leader in the annual Research Conference for more than 40 years, the award, named in his honor, is a tribute to his tireless efforts on behalf of the researchers, the association and the industry. Listed below are guidelines for the Student Competition as well as this year's winners:

1. Any student of a university or a college having researchers that participate in the Southern Nursery Association Research Conference, are not more than one (1) academic year removed from graduation and whose research was completed prior to graduation are eligible to compete.
2. Research is to be that of the presenter and a part of his/her educational studies. Contract work, unless a part of a thesis or classroom report (credit given), is not acceptable, as it may provide unlimited funding and an unfair advantage.
3. The number of student papers from a single university or college may be limited, should time restraints dictate.
4. The student must have submitted a title to the SNA Conference Editor by the deadline specified in the Call For Titles. The paper should then be submitted both to the Section Editor for the Student Competition and to the appropriate "topic" Section Editor no later than the specified deadline.
5. The paper must follow the guidelines for format and subject matter as stated in the Call For Titles for the SNA Research Conference.
6. Student and advisor should be listed as co-authors.
7. Oral presentation must be limited to seven (7) minutes. An additional three (3) minutes will be allotted for questions. A penalty of two (2) points per minute or part thereof for every minute over seven (7) minutes will be assessed.
8. Judging shall be based on preparation of the paper (50 points) and oral presentation (100 points) for a total of 150 points.

2004 Bryson L. James Student Competition Award Winners

B.S. Candidates

1st Place	-	\$500	Deidre Jones, Clemson University
2nd Place	-	\$300	Jennifer Watts, Montana State University
3rd Place	-	\$200	Josh Clark, Auburn University

M.S. Candidates

1st Place	-	\$500	Carroll Williamson, North Carolina State University
2nd Place	-	\$300	Adam Newby, Auburn University
3rd Place	-	\$200	Brian Jackson, Auburn University

Ph.D. Candidates

1st Place	-	\$500	James Owen, North Carolina State University
2nd Place	-	\$300	Krishna Nemali, University of Georgia
3rd Place	-	\$200	Michelle McGinnis, North Carolina State University

Table of Contents

Origin	Page(s)	Title and Author(s)
	19	CONTAINER-GROWN PLANT PRODUCTION
South Carolina	20-22	Screening Landscape Plants for Their Ability to Accumulate Nitrogen and Phosphorus. Robert F. Polomski, Milton C. Taylor, Stephen J. Klaine, Ted Whitwell, William C. Bridges.
Georgia	23-24	Rate of Calcined Clay Incorporation Influences Phosphorus Retention in a Pine Bark Substrate. John M. Ruter.
Georgia	25-26	Response of River Birch (<i>Betula nigra</i>) to Foliar and Drench Applications of Nickel. John M. Ruter.
Kansas	27-30	Response of Container-grown <i>Acer rubrum</i> and <i>Quercus rubra</i> to Foliar Application of a Kaolin Particle Film. Kenneth R. Schroeder, Marc A. Johnson.
South Carolina	31-33	Effect of Atmospheric Warming on the Growth of Red Maple. Joseph D. Bowden, William L. Bauerle.
Tennessee	34-36	Incorporation of Clay Amendments to Reduce Fertilizer Use in Poinsettias. Christopher J. Catanzaro, Sarabjit M. Bhatti, Haval R. Kamake.
Mississippi	37-39	The Effect of Cyclic Irrigation and Herbicide on Plant and Weed Growth in Production of <i>Magnolia grandiflora</i> 'Alta'. Glenn B. Fain, Keri L. Paridon, Peter M. Hudson.
Florida	40-42	Slab Production of Asiatic Jasmine for Instant Landscape Appeal. Julie Kahoun, Richard C. Beeson, Jr.
Georgia	43-45	Application of Nickel Cures "Mouse-Ear" Disorder on River Birch. John M. Ruter.
Michigan	46-50	Chlorophyll Fluorescence of Fir (<i>Abies</i> spp.) Seedlings in Response to pH. Bert Cregg, Marcus Duck, Carmela Rios, Bradley Rowe, Melvin Koelling.
Virginia	51-53	Use of Air-Root-Pruning Containers in Pot-in-Pot Systems. Hoyt W. March, Bonnie L. Appleton.
Georgia	54-56	Rate of Phosphorus Application Influences Growth of Four Ornamental Species. John M. Ruter.
Alabama	57-59	Pruning Effects on Nursery Crop Production. Kevin M. Brooks, Gary J. Keever, Teresa A. Morrison.
Virginia	60-62	How Do Micronutrient Sulfates Increase Pine Oak Seedling Growth? Jake F. Browder, Robert D. Wright, Alex X. Niemiera, J. Roger Harris.
North Carolina	63-66	How Do You Manage Aged Versus Fresh Pine Bark? Tiffany Harrelson, Stuart L. Warren, Ted E. Bilderback.
Alabama	67-69	Cotton Gin Compost as a Substrate Component in Container Production of Ornamental Plants. Brian E. Jackson, Amy N. Wright, Jeff L. Sibley.

Table of Contents

Origin	Page(s)	Title and Author(s)
Virginia	70-72	Effects of Various Compost-amended Substrates on Water Use Efficiency and Leaf Nutrition of <i>Clethra alnifolia</i> . Thomas Martin, Greg Eaton, J. Roger Harris.
North Carolina Florida	73-76	Finding the Balance: Calcined Clay Rate Effects in Pine Bark Substrates. James S. Owen, Jr., Stuart L. Warren, Ted E. Bilderback, Joseph P. Albano.
North Carolina	77-80	Timing of Overhead Irrigation Affects Growth and Substrate Temperature of Container-grown Plants. Carroll S. Williamson, Stuart L. Warren, Ted E. Bilderback.
Florida	81-83	Influence of Shoot Pruning on Nutrient Uptake in <i>Thyralis (Galphimia glauca Cav.)</i> . Joseph P. Albano, Thomas H. Yeager, Terence J. Evens.
Florida	84-89	Importance of Substrate Nutritional Testing Following Potting. Alex Bolques, Tom Yeager, Fred May.
Texas	90-93	A Leaf Interveinal Chlorosis-necrosis Disorder in Crape Myrtle. Raul I. Cabrera, R.E. Lopez.
Texas	94-97	Evaluating the Effectiveness of a Bio-soil Enhancer on Container Plant Production. Raul I. Cabrera, John Sloan, Kevin Ong, Lutfur Rahman.
Texas	98-101	Evaluating the Salinity Tolerance of Crape Myrtles (<i>Lagerstroemia</i> spp.). Raul I. Cabrera.
North Carolina	102-104	Physical Property Measurements in Container Substrates: A Field Quantification Strategy. Al Cooke, Ted Bilderback, Mary Lorscheider.
Florida	105-107	Efficacy of Conventional and Alternative Methods of Weed Control. E.R. Duke, G.W. Knox, A. Bolques, R. Mizell.
Mississippi	108-110	Irrigation and Fertilizer Placement Affects the Production of Container-grown <i>Quercus shumardii</i> . Glenn. B. Fain, Patricia R. Knight, Keri L. Paridon.
Kentucky	111-113	Effect of Fertilizer Brand, Rate, Application Technique, and June Reapplication on Growth of <i>Amelanchier</i> x 'Autumn Brilliance'. Amy Fulcher, Winston Dunwell, Dwight Wolfe, Robert McNiel.
Kentucky	114-116	Effect of Fertilizer Rate on Growth of Seven Tree Species in Pot-in-Pot Production. Amy Fulcher, Winston Dunwell, Robert McNiel, Dwight Wolfe, Lloyd Murdock.
South Carolina	117-119	Comparison of Canna (<i>Canna</i> 'King Humbert') and Willow (<i>Salix integra</i> 'Hakuro Nishiku') for Nitrogen and Phosphorus Uptake and Accumulation. Diedre A. Jones, Robert. F. Polomski, Milton D. Taylor, Stephen J. Klaine, Ted Whitwell, William C. Bridges.

Table of Contents

Origin	Page(s)	Title and Author(s)
North Carolina	120-123	Effects of Vermicompost Amended Pine Bark on Basil Production. Michelle S. McGinnis, Stuart L. Warren, Ted E. Bilderback.
Georgia	124-126	Costs of Establishing and Operating Container Nurseries Differentiated by Size of Firm, Zone 7. Forrest E. Stegelin.
Florida	127-129	Container Nursery Liability Waiver for Nitrates in Ground Water. Tom Yeager, Ken Kuhl.
Florida	130-132	Monitoring Phosphorus and Nitrate Nitrogen in Above Ground Porous Container. Laura M. Miller, Thomas H. Yeager, Claudia A. Larsen.
133 FIELD PRODUCTION		
Tennessee	134-136	Effect of Bare Root and B&B Harvest on Growth and Establishment of Landscape Size Trees. Donna C. Fare.
Oregon	137-140	Determining the Causes of Manganese Deficiency in Field-grown Red Maple. James Altland, Zachary Kuenzi.
Georgia	141-143	Costs of Establishing and Operating Field Production Nurseries Differentiated by Size of Firm, Zone 7. F.E. Stegelin.
Arkansas	144-145	Effect of Weed Control on the Growth of Field-grown Shade Trees in Central Arkansas. James A. Robbins.
Virginia	146-149	Effect of Rootball Type and Season of Transplanting on Growth of Sugar Maple and Red Oak. J. Roger Harris.
151 ENTOMOLOGY		
Florida	152-155	Evaluation of Insecticides to Control the Asian Ambrosia Beetle, <i>Xylosandrus crassiusculus</i> . Russell F. Mizell, III, T. Charles Riddle.
Texas	156-157	Insecticide Efficacy Trials for Control of Florida Wax Scale. Scott Ludwig.
Tennessee	158-163	Comparison of Different Trap Types for Collection of Asian Ambrosia Beetles. Jason B. Oliver, Nadeer N. Youssef, Mark A. Halcomb.
Tennessee Ohio	164-167	Botanical Extracts as Potential Japanese Beetle Repellents. Nadeer N. Youssef, Jason B. Oliver, Michael G. Klein, James J. Moysenko.
Texas	168-172	Effect of Insecticides from Five Chemical Classes on the Growth and Production of Pot Mums (<i>Dendranthema grandiflora</i> Tzvelev var. Charm. James D. Spiers, Fred T. Davies, Jr., Chuanjiu He, Amanda Chau, Kevin M. Heinz, Terri W. Starman.

Table of Contents

Origin	Page(s)	Title and Author(s)
Alabama Georgia	173-175	Insecticide Screening for Control of Tea Scale, <i>Fiornia theae</i> . Charles P. Hesselein, Joseph R. Chamberlin.
Mississippi	176-179	Insecticide Efficacy Trials for Control of the Strawberry Rootworm, <i>Paria fragariae</i> Wilcox, (Coleoptera: Chrysomelidae). Charles P. Hesselein, David Boyd Jr.
Alabama Indiana	180-183	Miticide Screening for Control of Broad Mite, <i>Polyphagotarsonemus latus</i> on Greenhouse Azaleas, <i>Rhododendron spp.</i> 'Prize'. Charles P. Hesselein, Michelle Bell.
Texas	184-189	Manipulating Fertility Affects Susceptibility of Potted Chrysanthemum to Western Flower Thrips (<i>Frankliniella occidentalis</i>). Fred T. Davies, Jr., Chuanjiu He, Amanda Chau, Kevin M. Heinz, James D. Spiers.
Tennessee Florida	190-191	Southern Plant Diagnostic Network: Educational Efforts to Improve Detection of Agricultural Pests. Frank A. Hale, Amanda C. Hodges, David. L. Cook, Thomas C. Stebbins.
Mississippi South Carolina	192-194	The Twobanded Japanese Weevil, <i>Pseudocnecorhinus bifasciatus</i> (Roelofs) (Coleoptera: Curculionidae): Southeastern U.S. Distribution of an Adventive Pest of Ornamental Shrubs. David W. Boyd, Jr., Alfred G. Wheeler, Jr.
Tennessee	195-199	Clearwing Moth Attraction to Commercial Pheromone Lures and Colored Traps in East Tennessee. Christopher Vaughn, William Klingeman, Frank Hale, Jerome Grant.
Mississippi Alabama	200-202	Biology of the Strawberry Rootworm, <i>Paria fragariae</i> (Coleoptera: Chrysomelidae) in Containerized Azaleas. David W. Boyd, Jr., Charles P. Hesselein.
Texas	203-206	Response of Western Flower Thrips to Fertilization of Potted Chrysanthemums. Amanda Chau, Kevin M. Heinz, Chuanjiu He, Fred T. Davies, Jr.
Georgia	207-211	Imidicloprid, Cyfluthrin; Nursery Insecticide (Discuss). Jeffrey H. Dobbs.
	213	PATHOLOGY AND NEMATOLOGY
Tennessee	214-218	Effects of Soybean Oil Formulations on Powdery Mildew and Photosynthesis of Dogwoods. Adriane Cannon, Dennis Deyton, Carl Sams, William Klingeman.
Arkansas	219-223	Chemical and Biological Control of Powdery Mildew on <i>Phlox paniculata</i> L. Erin L. Taylor, Rick D. Cartwright, James A. Robbins.

Table of Contents

Origin	Page(s)	Title and Author(s)
Tennessee	224-230	The Potential of Biorational Products in the Management of Insect and Folige Diseases. M.T. Mmbaga, J. Oliver, M. Keri, N. Youssef.
Tennessee	231-232	A First Report of Daylily Rust in Tennessee. A.S. Windham, M.T. Windham, T.C. Stebbins, W.E. Copes, L.H. Self.
Tennessee	233-234	Pilot Survey for <i>Phytophthora ramorum</i> in Nurseries in Tennessee, 2003. Alan Windham, Kurt Lamour, Mark Windham, Robert Trigiano, Elizabeth Long, Anni Self.
Virginia Washington	235-239	Peanut Hull Composting Temperatures and Implications for Viability of Sclerotia of <i>Sclerotium rolfsii</i> . T.J. Banko, A.L. Landon, R.F. Walden.
Texas	240-242	Resistance of Wax Begonia Cultivars to <i>Rhizoctonia solani</i> in Southern Landscapes. Carlos E. Bográn, Brent Penberon, Thomas Isakeit.
Mississippi	243-246	Inoculation Efficacy of the Medium Used for Suspension of <i>Puccinia hemerocallidis</i> Urediniospores. Christopher L. Cheatham, Warren E. Copes.
Mississippi Georgia	247-249	Effect of Plant Spacing on Microclimate and Rhizoctonia Web Blight Development in Container-grown Azalea. W.E. Copes, H. Scherm.
Alabama	250-253	Impact of Application Rate and Treatment Interval on the Control of Black Spot of Rose with Compass. A.K. Hagan, J.W. Olive, J. Stephenson, M.E. Rivas-Davila.
Alabama	254-259	Control of Powdery Mildew, Spot Anthracnose, and Cercospora Leaf Spot on Field-Grown Flowering Dogwood Trees. A.K. Hagan, J.R. Akridge, M.E. Rivas-Davila.
Alabama	260-264	Reaction of Marigold Selections to Alternaria Leaf Spot. A.K. Hagan, J.R. Akridge, M.E. Rivas-Davila.
Virginia	265-267	Efficacy of Chlorine on <i>Pythium</i> Species in Irrigation Water. Chuan Hong, Patricia A. Richardson.
Tennessee	268-269	Response of Bedding Plants to Heritage Maxx. M.T. Windham, A.S. Windham.
Tennessee	270-272	Host-Pathogen Interactions Between Cornus Species and Powdery Mildew. M.T. Windham, R.N. Trigiano, A.S. Windham.
Tennessee	273-275	A New Ringspot Virus in Kalmia? M.T. Windham, A.S. Windham, R.N. Trigiano.
Tennessee	276-279	Characterization of Potential Biological Control Agents for Dogwood Powdery Mildew. F.A. Mrema, M.T. Mmbaga, A. Shi.

Table of Contents

Origin	Page(s)	Title and Author(s)
Tennessee	280-282	Evaluation of Fungicides for Control of Bacterial Blight of Dogwood. E.C. Nnodu, M.T. Mmbaga.
Alabama	283-284	Control of Powdery Mildew on Container-grown Dogwood Trees Using the Biorational Fungicide MilStop™. John W. Olive, Austin K. Hagan, James C. Stephenson.
Tennessee	285-289	Genetic Diversity in Dogwood Selections Inferred from AFLP and Microsatellite-primed PCR. A. Shi, M.T. Mmbaga, S. Zhou, F.A. Mrema.
North Carolina	290-293	Evaluation of Chemical and Cultural Methods for Managing Foliar Nematodes on Woody Ornamental Crops in Nurseries. Colleen Y. Warfield, Jerry B. Dudley, P. Alan Hight.
	295	ENGINEERING, ECONOMICS, STRUCTURES AND INNOVATIONS
Alabama	296-299	Evaluation of Composted Household Garbage as a Horticultural Substrate. Scott D. Croxton, Jeff L. Sibley, Wenliang Lu, Milton Schaefer.
Alabama	300-305	Estimation of U.S. Bark Supply. Wenliang Lu, Jeff L. Sibley, Jim S. Bannon, Yaoqi Zhang, Charles H. Gilliam.
Mississippi	306-309	Socioeconomic Survey of Nursery Automation. B. Posadas, P. Knight, C. Coker, G. Fain, D. Veal, R. Coker.
Arizona	310-312	Climate Control Concepts for Retractable Roof Greenhouse. Gene A. Giacomelli, Armando Suárez-Romero, Jennifer Nelkin, Ursula Schuch, Merle Jensen, Chieri Kubota.
Mississippi	313-316	Production of Bareroot <i>Ophiopogon japonicus</i> Using Calcined Clay as a Growth Substrate. Glenn B. Fain, Keri L. Paridon.
Ohio	317-319	Tree Liner Production Using Retractable Roof Greenhouses. Alison A. Stoven, Hannah M. Mathers, Daniel K. Struve.
	321	GROWTH REGULATORS
Alabama	322-324	Growth Regulation of <i>Vinca minor</i> . Josh B. Clark, Gary L. Keever, Teresa A. Morrison.
Georgia	325-326	Paclobutrazol Drenches Influence Growth of Container-grown Ornamental Napiergrass. John M. Ruter, Keith Mickler, Wayne W. Hanna.

Table of Contents

Origin	Page(s)	Title and Author(s)
Texas	327-329	Responses of <i>Lagerstroemia indica</i> , <i>Catharanthus roseus</i> , and <i>Zinnia elegans</i> to AuxiGro® Applications During Nursery Production. Garry V. McDonald, Michael A. Arnold, Kyle Bading, Alicia Bonds.
North Carolina	330-331	Flower Buds for Container Grown Hybrid Rhododendron. Richard E. Bir, Joseph L. Conner.
	333	PROPAGATION
North Carolina	334-336	Propagation of <i>Lindera umbellata</i> by Stem Cuttings. Peter J. Conden, Frank A. Blazich, Daniel S. Norden.
North Carolina	337-341	Mist, Vapor Pressure Deficit, and Cutting Water Potential Influence Rooting of Stem Cuttings of Loblolly Pine. Anthony V. LeBude, Frank A. Blazich, Barry Goldfarb.
North Carolina	342-345	Rooting Stem Cuttings of Loblolly Pine Using an Aeroponic System. Kelly A. Dougherty, Anthony V. LeBude, Barry Goldfarb, Frank A. Blazich.
Tennessee	346-348	In Vitro Regeneration of <i>Cladrastis kentukea</i> . Denita Hadziabdic, Robert N. Trigiano, Stephen Garton, Mark T. Windham, William E. Klingemen, Lori A. Weaver-May.
Alabama Georgia	349-352	Substrate Application of Auxin for Rooting Cuttings of <i>Elaeagnus xebbingei</i> . Eugene K. Blythe, Jeff L. Sibley, Ken M. Tilt, John M. Ruter.
North Carolina	353-355	Alternative Production of Atlantic White Cedar and Other Native Plants for Wetland and Stream Restoration in North Carolina. Andrew C. Bell, Mary M. Peet, L. Eric Hinesley.
Tennessee	356-358	In Vitro Regeneration of <i>Cornus kousa</i> . Denita Hadziabdic, Robert N. Trigiano, Stephen Garton, Mark T. Windham.
Virginia	359-361	Potential Micropropagation Techniques for <i>Astilbe</i> . B.W. Trader, H.L. Scoggins, R.E. Veilleux.
Tennessee	362-365	Flowering and Growth Responses of <i>Echinacea paradoxa</i> and <i>E. purpurea</i> to Cyclic Light Treatments. A. Naseer Aziz, Deborah Long, Roger J. Sauve.
Tennessee	366-368	In Vitro culture of <i>Phlox paniculata</i> L. and <i>Monarda didyma</i> . S.M. Bhatti, R. Sauve.
	369	WEED CONTROL
Alabama	370-373	Minimum Duration of Diuron Exposure for Oxalis Control. Ben M. Richardson, Glenn R. Wehtje, Charles H. Gillian, Glenn B. Fain.

Table of Contents

Origin	Page(s)	Title and Author(s)
North Carolina	374-376	Common Weeds and Weed Management in Australian Nurseries. Joseph C. Neal.
North Carolina	377-380	Early Postemergence Control of Container Weeds with Broadstar, OH2, and Snapshot TG. Caren A. Judge, Joseph C. Neal.
Montana	381-385	Biology and Control of Perennial <i>Viola</i> Species – A Potential Nursery Weed. J.D. Watts, J. Briggs.
Montana	386-390	Preemergent Herbicides for Establishment of Native Plant Species. Jeanne Briggs, Jennifer Watts.
Tennessee	391-395	Mugwort Regeneration from Rhizome Sections in Sand, Pine Bark, and Soil Substrates. William E. Klingemen, Darren K. Robinson, Philip C. Flanagan, Gary L. McDaniel.
Alabama Oregon Tennessee	396-400	Postemergence Control of Liverwort in Container Production. Adam Newby, James Altland, Charles Gilliam, Donna Fare, Glenn Wehtje.
Oregon	401-403	<i>Oxalis corniculata</i> L. Response to Substrate pH. Sugae Wada, James Altland, Carol Mallory-Smith, Jack Stang, Grazyna Holownia.
Oregon	404-406	Effect of Nitrogen Form on Weed Vigor in Containers. James Altland, Marzena Mackiewicz.
Georgia	407-410	The Effect of Preemergent Herbicides on Bigleaf Hydrangeas (<i>Hydrangea macrophylla</i> 'Nikko Blue.')
	411	LANDSCAPE
Alabama Virginia	412-414	The Horhizotron™: A New Instrument for Measuring Root Growth. Amy N. Wright, Robert D. Wright.
Louisiana	415-417	Landscape Performance of Lantana Cultivars – 2003. Allen Owings, Anthony Witcher, Allen Broyles, Ed Bush.
Louisiana	418-421	All American Daylilies: Landscape Performance and Rust Observations. Allen Owings, Gordon Holcomb, Anthony Witcher, Ed Bush.
Florida	422-425	The Milton Gardens: A History and Future of Teaching, Research and Display. Mack Thetford, Barry O. Ballard, Josiah S. Raymer, James L. Gibson, Richard K. Schoellhorn.
Florida	426-428	Alternative Irrigation Technology on Display in an Educational Garden: Quantifying the Water Needs of a Typical Florida Landscape. S.M. Scheiber, H.M. Buchanan, J.L. Hitchcock, L.O. Singleton, S. Vyapari.
North Carolina	429-430	Landscape Design in the South... It's Time for a Change. Kim Powell.

Table of Contents

Origin	Page(s)	Title and Author(s)
Kansas	431-433	Turfgrass Affects First Year Growth and Photosynthesis of Redbuds (<i>Cercis canadensis</i> L.). Jason J. Griffin, William R. Reid, Dale J. Bremer.
Virginia	434-436	Wire Basket Alteration at Installation. Bonnie L. Appleton, Scharlene A. Floyd.
Virginia	437-440	Tree Stabilization at Installation. Bonnie L. Appleton, Carolyn M. Beatty.
North Carolina	441-445	Effect of Nitrogen Rate and Nitrogen Timing on Herbaceous Perennials in a Simulated Landscape. C.L. Proctor, S.L. Warren, R.L. Mikkelsen, D.J. Werner, H.T. Kraus.
North Carolina	446-449	Effects of Day/Night Temperature on Survival of <i>Delphinium x cultorum</i> . Jean-Jacques B. Dubois, Frank A. Blazich.
	451	MARKETING
New Jersey	452-459	Tool to Help Decide if Your Greenhouse is in the Green (\$). Dr. Robin Brumfield.
Michigan	460-463	Financial Benchmarks for Michigan Greenhouses. Bridget Behe, Wen-fei Uva, Jessica Hicks.
Texas Michigan	464-468	Repositioning <i>Syringa meyeri</i> as a Profitable Dual-Use Flowering Plant. Jessica Hicks, Kevin Brothers, Bridget Behe, R. Thomas Fernandez, R. Daniel Lineberger.
Arkansas	469-471	Information Source Preference for Arkansas Ornamental Firms. Ronald L. Rainey, Jim Robbins.
Indiana Michigan	472-474	Satisfaction Guaranteed: Do Guarantees Help Customers Repurchase Gardening Products? Jennifer H. Dennis, Bridget K. Behe.
Indiana Michigan	475-477	Was it Something I Said: Understanding Why Customers Switch? Jennifer H. Dennis, Bridget K. Behe.
Alabama	478-482	Economic Impact Analysis of Alabama's Green Industry. Deacue Fields, Moriah Bellenger, Ken Tilt.
Florida	483-485	Exit Survey of Consumer Purchasing Habits at Florida Retail Garden Centers. L.N. Satterthwaite, J.J. Haydu, A.W. Hodges.
Mississippi	486-487	2003 Mississippi Medallion Marketing Campaign. Norman Winter, Ken Hood, David Tatum.
Tennessee Florida	488-494	The Fourth National Nursery Industry Survey of Production and Marketing Practices. John Brooker, Charles Hall, David Eastwood, Alan Hodges, John Haydu.

Table of Contents

Origin	Page(s)	Title and Author(s)
Tennessee	495-498	The Status of Computerization in the U.S. Nursery Industry. Charles Hall, John Brooker, David Eastwood.
Mississippi	499-501	Consumer Preferences for Edible Daylilies. P.R. Knight, C. Coker, G. Fain, A. Pollard, P. Coggins.
Mississippi	502-507	Consumer Survey of Chrysanthemum Cultivars. B. Posadas, C. Coker, G. Fain, P. Knight, R. Coker.
Georgia	508-510	What Do Customers Value in a Plant Purchase and Their Willingness to Pay? F.E. Steglin.
Tennessee	511-513	Factors Affecting Nursery and Floriculture Crop Sales: An Aggregated Economic Analysis. E. Ekanem, S. Muhammad, F. Tegegne, S. Singh.
Tennessee	514-517	Factors Affecting Growth of Nursery Businesses in Tennessee. Safdar Muhammad, Enefiok Ekanem, Fisseha Tegegne.
Louisiana	518-520	Retailers Push New Requirements Into the Sales Agreement with Nursery Growers. Dr. Roger A. Hinson.
Florida	521-524	An Internet-Based System for Financial Benchmark Analysis of Wholesale Nursery Operations. Alan W. Hodges, John J. Haydu.
	525	WATER QUALITY & MANAGEMENT
Tennessee	526-529	Soil pH and Organic Carbon Content Under Rain-fed Condition in Nursery Stock Quarantine Treatment of Japanese Beetle. Sam O. Dennis, Jason Oliver, Peter Nveawiah-Yoho, Bhargavi Sheshahala.
Florida	530-532	Establishment of Perennials in Hydrophilic Polymer-Amended Soil. Jyotsna Sharma.
South Carolina	533-534	N and P Discharge During Spring Regrowth from Constructed Wetlands in a Commerical Nursery. Milton D. Taylor, Stephen J. Klaine, Ted Whitwell.
Florida	535-537	Irrigation Volumes and Tree Growth of <i>Quercus virginiana</i> in Porous Bottom Containers and #25 Pot-in-Pot. R.C. Beeson, Jr., T.H. Yeager, J. Kahoun.
	539	PLANT BREEDING & EVALUATION
Virginia	540-542	Utility Line Arboreta. Bonnie L. Appleton, Brenda M. Johnson-Asnicar.
North Carolina	543-544	Deciduous Holly Fruit Abundance and Size. Richard E. Bir, Joseph L. Conner.

Table of Contents

Origin	Page(s)	Title and Author(s)
Mississippi	545-547	Resistance of Selected Hibiscus Genotypes to the Hibiscus Sawfly. Christopher L. Cheatham, David W. Boyd, Jr.
North Carolina	548-551	Variation in Ploidy Level Among Birch Taxa. Thomas A. Eaker, Thomas G. Ranney, Zenaida J. Vilorio, Joel A. Mowrey.
North Carolina	552-554	New Opportunities for Breeding Allopolyploid Azaleodendrons. Ryan N. Contreras, Thomas G. Ranney.
Florida	555-559	Evaluating Eleven <i>Nandina domestica</i> Taxa in North and South Florida. Gary W. Knox, Sandra B. Wilson, Laurie K. Mecca.
Florida	560-562	Promising Magnoliaceae for the Gulf Coast. Gary W. Knox.
North Carolina	563-565	Initiation of Statewide Evaluations of <i>Pittosporum</i> Taxa in North Carolina. F. Todd Lasseigne, Jon L. Roethling, Anne Calta.
Arkansas	566-568	SERA-IEG-27 Regional Plant Evaluations. Jon T. Lindstrom.
Texas	569-571	Wildflowers: Taming the Natives for Commerical Production. Cynthia McKenney, Sandra Balch, Dick Auld.
Mississippi	572-574	Modified Diallel Analysis of First Year Height of Grape Myrtle Hybrids. Cecil Pounders, Chris L. Cheatham.
North Carolina	575-579	Reproductive Pathways Among Flowering Crabapples. Thomas G. Ranney, Thomas A. Eaker, Nathan P. Lynch, Richard T. Olsen.
Tennessee	580-582	Floral Characteristics of a <i>Hydrangea macrophylla</i> x <i>H. paniculata</i> Hybrid. Sandra M. Reed.
North Carolina	583-585	<i>Mahonia</i> : Past, Present, & Future. Jon L. Roethling, F. Todd Lasseigne, Jeffery R. Jones.
Georgia	586-588	Field Performance of <i>Photinia</i> Taxa in South Georgia. John M. Ruter.
Georgia	589-591	Landscape Evaluation of Lilacs for South Georgia. John M. Ruter.
Mississippi	592-594	Evaluation of Techniques to Induce Polyploid Daylilies. Hamidou F. Sakhanokho, Christopher L. Cheatham, Cecil Pounders.
Tennessee	595-596	DNA Fingerprinting of Flowering Dogwood Cultivars. Naomi R. Smith, Robert M. Trigiano, Kurt H. Lamour, Mark T. Windham.
Georgia	597-601	Photobleaching of <i>Abelia</i> Selections Can Be Predicted From Spectral Reflectance of the Leaves. Marc W. van Iersel, Carol D. Robacker.

Table of Contents

Origin	Page(s)	Title and Author(s)
Georgia Maine	602-606	Ornamental Plant Trials from Georgia to Maine – A Case Study of <i>Chamaecyparis thyoides</i> Accessions. Donglin Zhang, Michael Dirr.
Georgia Maine	607-609	Potential New Ornamental Plants from China. Donglin Zhang, Michael Dirr.
Tennessee	610-611	Identification of Cold Temperature Regulated Genes in <i>Pachysandra terminalis</i> Using cDNA Differential Display. Suping Zhou, Roger Sauve, Abudullah Adubullah.
	613	FLORICULTURE
Virginia	614-617	Managing Growth of Herbaceous Perennials: Fertilizer Rate Versus Uniconazole. Holly L. Scoggins.
Georgia	618-623	Moisture Stress for Growth Control: Physiological Responses of <i>Salvia</i> (<i>Salvia splendens</i>) and <i>Vinca</i> (<i>Catharanthus roseus</i>). Krishna S. Nemali, Marc W. van Iersel.
Kentucky	624-626	Extended Vase Life for Cut Stems of <i>Hydrangea paniculata</i> . Todd Leeson, Sharon Bale, Terry Jones, Winston Dunwell, Robert McNiel.
Kentucky	627-630	Preservative and Temperature Postharvest Treatments on <i>Hydrangea paniculata</i> 'Kyushu.' Todd Leeson, Robert McNiel, Sharon Bale.
Alabama	631-634	Poinsettia Cultivar Trials at the Ornamental Horticulture Research Center, Mobile, AL (OHRC). C.P. Hesselein, J.C. Stephenson, J.W. Olive, J.R. Kessler.
Georgia	635-639	The Effects of Soil Incorporated PEG-8000 on Stem Elongation and Whole Plant Photosynthesis and Respiration of Marigold (<i>Tagetes patula</i>). Stephanie E. Burnett, Marc W. van Iersel, Paul A. Thomas.
Florida	640-642	Ornamental Vegetable Cultivar Comparison Study: Growth Characteristics and Response to Daminozide Foliar Sprays. James L. Gibson, Shannon Crowley, Lindsay Mullinax.
Mississippi	643-646	Improving the Postharvest Life of Woody Cut Stems. Lane Greer, John M. Dole, Sylvia M. Blankenship.
Mississippi	647-650	Evaluation of Ivy and Cascade Geranium Cultivars for the Mid-South. Richard L. Harkess.
Mississippi	651-653	Southern Ornamental Foliages for Commerical Use in Floral Design. Lynette McDougald, Jim DelPrince, Richard L. Harkess.

SNA Research Conference Proceedings

The SNA Research Conference Proceedings contains the latest research and developments pertaining to the following subjects:

- Container-Grown Plant Production
- Field Production
- Entomology
- Pathology and Nematology
- Engineering, Economics, Structures & Innovations
- Growth Regulators
- Propagation
- Weed Control
- Landscape
- Marketing
- Water Management
- Plant Breeding & Evaluation
- Floriculture

As an SNA member, you are entitled to one free copy of this popular industry publication. The SNA Research Conference Proceedings is mailed automatically to all wholesale grower members and SNA researchers. If you are a non-grower or non-researcher member, you can request your free copy of this invaluable publication by filling out the form below and faxing or mailing it to the SNA office. Additional copies of the SNA Research Conference Proceedings are available to members at \$25 each. Non-member cost is \$40 each. The latest Proceedings can also be ordered on CD-Rom at \$15 each for SNA Members and \$20 each for non-members. For the 1990-2004 Proceedings on CD-Rom, the cost is \$50 for members and \$100 for non-members.



2004 SNA Research Conference Proceedings Request Form



Company Name: _____

Contact: _____

Shipping Address: _____

City/State/Zip: _____

Phone: _____ Fax: _____

I would like to purchase an additional copy of the 2004 Research Proceedings.

	Quantity	Price	Amount Due
SNA Member :	_____	@ \$25 ea.	\$ _____
Non-Member :	_____	@ \$40 ea.	\$ _____
Check Number:	_____	Enclosed for	\$ _____
Charge \$	_____	to my	<input type="checkbox"/> Visa <input type="checkbox"/> MC <input type="checkbox"/> Amex <input type="checkbox"/> Discover

Name on Card: _____

Billing Address: _____

Card # _____

Card Verification #: _____ Expiration Date _____

(Amex - 4 digits above credit card; Visa - Last 3 digits on back of card)

Signature _____