

PROCEEDINGS OF



**RESEARCH  
CONFERENCE**

**Forty-Third Annual Report**

**1998**

Compiled and Edited by:  
Bryson L. James  
Post Office Box 230  
McMinnville, TN 37111



# Southern Nursery Association, Inc.

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## RESEARCH CONFERENCE

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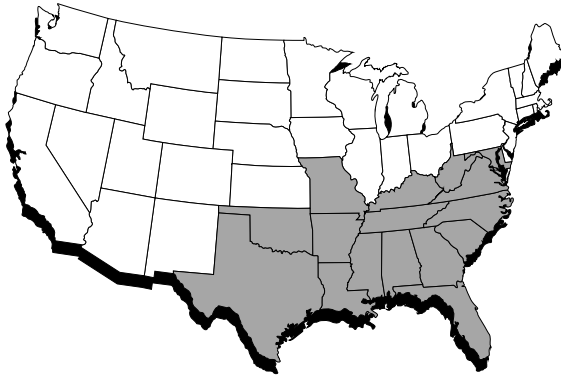
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## ***SIXTEEN GREAT STATES AND BEYOND!***



### **Annual SNA Research Conference**

This two-day Horticultural Research Conference is held annually in Atlanta, GA in conjunction with the SNA... The World's Showcase of Horticulture® and has become world-renowned for quality research. Participants are the top horticultural research and educational leaders representing the South's top universities. All industry members are invited to attend any and all sessions. 100's of topics in twelve categories is shared in presentations approximately seven minutes each. The conference format allows you to sit in on all or only those topics of interest to you. Research presented at the conference is published in the annual publication "SNA Research Conference Proceedings" contained herein. For more information on the SNA Research Conference or the SNA Horticultural Trade Show and Convention, contact:

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## **ACKNOWLEDGMENTS**

The editor and the Board of Directors of the Southern Nursery Association wish to express their sincere appreciation to David Tatum, Donna Fare, Marc Tefteau, Frank Hale, John Olive, Mark Arena, Joyce Latimer, Joe Eakes, Stuart Warren, Roger Harris, Mel Garber, Jim Berry and Phillip Flanagan for the fine job they did as Section Editors and Moderators.

We would like to extend our gratitude to all the researchers and nurserymen who attended the 43rd annual conference and/or contributed to these Proceedings and continue to make this annual event an industry success.

## **NOTICE**

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**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 can not benefit from the research. What it does mean is that you should use the research information on a trial basis first, 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.

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®.



**43rd ANNUAL  
SOUTHERN NURSERY ASSOCIATION**

**RESEARCH CONFERENCE PROCEEDINGS  
1998**

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Proceedings of the SNA Research Conference is published annually by the Southern Nursery Association and one copy is provided at no charge to all SNA members, horticultural libraries and contributing authors.

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 COPIES:**

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**THE PORTER HENEGAR MEMORIAL AWARD  
for  
HORTICULTURAL RESEARCH**



Dr. Robert E. McNiel

The Southern Nursery Association honored Dr. Robert E. McNiel of the University of Kentucky, Lexington, KY, this year when he was presented the SNA Porter Henegar Memorial Award during the 43rd annual SNA Research Conference.

This award, originally known as the Research Award of Merit, was created in 1968, to honor those individuals who have made outstanding contributions to ornamental horticulture research and more specifically to the SNA. In 1972, the award was renamed the Porter Henegar Memorial Award to honor one of SNA's past Executive Secretaries, the late Porter Henegar. Nominations are made each year by the most recent past four recipients and SNA Director of Research, Dr. Bryson L. James.

Dr. McNiel received his B.S. degree in Horticulture at Iowa State University in 1968. Following active duty in the U.S. Army and a tour in Vietnam, he earned M.S. and Ph.D. degrees in Horticulture at Purdue University. McNiel taught Ornamental Horticulture at Cal Poly State University-SLO for two years before accepting a faculty position in Horticulture at the University of Kentucky where he has dedicated himself to extension, research and teaching responsibilities for the past twenty-two years. His research efforts have focused on weed management, production/marketing systems, and landscape plant evaluation. Herbicide evaluation projects have contributed significantly to the date necessary to gain approval for and expansion of herbicide labels for field-grown nursery crops. His cooperation with UK Entomologists and Plant Pathologists has resulted in more detailed and reliable landscape plant recommendations. His contributions to a regional project emphasizing production systems and economics has resulted in several bulletins to aid nursery managers. He has taught courses in nursery production and landscape management since 1980.

Since 1985, he has served as advisor to the UK Horticulture Club and the ALCA competitive team. He has organized Kentucky's conference on nursery crops and landscape horticulture for the past 22 years and has been a primary advisor to the Kentucky Nursery and Landscape Association since 1976. Dr. McNiel developed the study guide and administers the test for the Kentucky Certified Nursery Professional program. He received the L.C. Chadwick Award from the American Nursery & Landscape Association in 1997 in recognition of outstanding teaching. He has also been awarded the Gamma Sigma Delta's Master Teacher Award in the UK College of Agriculture.

**THE  
BRYSON L. JAMES  
STUDENT RESEARCH COMPETITION  
1998 AWARDS**

This long-standing program was renamed in August 1989, in honor of Dr. Bryson L. James, Director of Horticultural Research for the Southern Nurserymen's Association. Dr. James has been an active participant and leader in the annual Research Conference for more than 40 years, and 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 the guidelines for the Student Competition as well as this year's winners:

1. Any student of a university or college having researchers can participate in the Southern Nurserymen's Association Research Workers Conference if not more than a one (1) academic year removed from graduation and whose research was completed prior to graduation.
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 since it may provide unlimited funding and an unfair advantage.
3. Previous first-place winners are not eligible.
4. The student must have submitted a title to the SNA Conference Chairman by the specified time in the Call For Titles. The paper should be submitted to the Section Chairman for the Student Paper Award no later than **July 1**. Also, a copy should be sent to the appropriate "topic" Section Editor.
5. The paper should follow the guidelines for the SNA Research Workers Conference in relation to format and subject matter.
6. The student and his 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.

**1998 Bryson L. James Student Competition Award Winners**

**B.S. and M.S. Candidates**

1st Place	-	\$500	Christine K. Hayes, Auburn University
2nd Place	-	\$300	James Altland, Auburn University
3rd Place	-	\$200	Jason J. Griffin, NC State University

**Ph.D. Candidates**

1st Place	-	\$500	F. Todd Lasseigne, NC State University
2nd Place	-	\$300	Tom Glasgow, NC State University
3rd Place	-	\$200	Janna Sichivista, Auburn University



**CONTAINER-GROWN PLANT PRODUCTION**

<b>Origin</b>	<b>Page(s)</b>	<b>Title and Author(s)</b>
TX	18-20	Effects of Mycorrhizal Fungi and Phosphorus on Drought Resistance of Containerized Neem Trees ( <i>Azadirachta indica</i> ). Lop Phavaphutanon and Fred T. Davies, Jr.
MS	21-22	Composted Cotton Gin Trash as Substrate Amendment for Greenhouse Production. David H. Tatum and Karl K. Crouse.
MS	23-27	Effects of Composted Cotton Gin Trash on Growth Substrates, Karl K. Crouse and David H. Tatum.
MS	28-31	Impact of Coir-based Media in Azalea Growth. Patricia R. Knight, John M. Anderson and Ralph A. Parks.
TN OH	32-34	The Use of Vermicompost as a Media Amendment. Gary R. Bachman and Jim Metzger.
AL GA	35-38	Monthly Growth Patterns for Red Maple Cultivars. Jeff L. Sibley, John M. Ruter and D. Joseph Eakes.
NC	39-43	Growth Response of Daylily to Bioconverted Swine and Irrigation Volume. Cindy L. Flinn, Ray Campbell and Ted E. Bilderback.
LA	44-49	Evaluation of Subdue® and Truban® on Five Azalea Cultivars. Mark Le Blanc, Edward Bush and Allen Owings.
TX	50-52	Plant Responses to Sequential Use of Spin Out®-Treated Containers During Up-Canning Is Species Specific. Steven P. Obst, Charles R. Hall, Michael A. Arnold and Douglas F. Welsh.
GA	53-55	Biodegradable Fiber Containers Improve the Growth of 'Aztec Gold' Daylily. John M. Ruter.
GA	56-58	Pot-In-Pot Production and Fertilizer Rates Influence Growth of River Birch. John M. Ruter.
GA	59-61	Production of 'Rotundiloba' Sweetgum Using Tex-R Agroliners. John M. Ruter.
MS	62-65	Evaluation of Deciduous Holly Production in USDA Zone 7b and 8b. Richard L. Harkess and Patricia R. Knight.
AL GA	66-70	Growth of Red Maple Cultivars in Multiple Locations Affected by Production Environment. Jeff L. Sibley, John M. Ruter and D. Joseph Eakes.
SC	71-75	Comparing Above-ground and In-ground Pot-in-pot Container Systems. Jason London, R. Thomas Fernandez, Roy E. Young and Gerald D. Christenbury.

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AL	76-79	Recycled Newspaper Reduces Nitrate Leaching from Nursery Containers. Janna O. Sichivitsa, Charles H. Gilliam, James H. Edwards, Jr., Gary J. Keever and John W. Olive.
LA	80-82	The Use of Crumb Rubber as a Media Component for Container-Grown Wood Ornamentals. Kris M. Leader, Edward W. Bush and Allen D. Owings.
KY	83-86	Root and shoot development after early radicle pruning in oak ( <i>Quercus rubra</i> ). Gisele G. Martins, Robert Geneve and Sharon Kester.
AL	87-90	Effects of Cyclic Micro-Irrigation and Substrate in Pot-in-Pot Production. Glenn B. Fain, Ken M. Tilt, Charles H. Gilliam, Harry G. Ponder and Jeff L. Sibley.
VA	91-93	Root and Soot Growth Periodicity of 15-Gallon Pot-in-Pot Red and Sugar Maples. J. Roger Harris and Jody Fanelli.
VA	94-99	Micronutrient Fertilization Essential Regardless of Pin Bark pH. Amy N. Wright, Alex X. Niemiera, Robert D. Wright and J. Roger Harris.
TN	100-101	Production of Potted Chrysanthemum with Selected Slow Release Fertilizers. Christopher J. Catanzaro and Roger J. Sauve.
OR	102-106	Interaction of Irrigation Frequency and Container Drain Hole Design on Growth of Three Nursery Crops. Sven E. Svenson.
OR	107-112	"Cold-Trapping" in Retractable Roof Structures to Avoid Spring Frost Damage of Container-Grown Nursery Crops. Sven E. Svenson, Neil Bell and Alison Henderson.
FL	113-116	Container Plant Production in Multiple Pot Box. D. Z. Haman, T. H. Yeager, S. Irmak and C. Larsen.
FL	117-121	Chilling Injury on Twenty Aglaonema Cultivars. Richard W. Henley, Richard J. Henny and Jianjun Chen.

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### FIELD PRODUCTION

- KY 124-127 Effects of Controlled-Release Fertilizers on Growth and Nutrient Content of Field-grown Nursery Crops. Dewayne L. Ingram, Brian Roach and Mike Klahr.
- TN 128-130 Nursery Tree N Fertilization and Ground Water Contamination In Middle Tennessee. Reed W. Cripps and W. Edgar Davis.

### ENTOMOLOGY

- GA 132-134 Evaluation of New Acaricides for the Management of Two-Spotted Spider Mites. Monica Townsend and Ronald D. Oetting.
- AL 135-140 An Evaluation of Selected Miticides for control of Two Spotted Spider Mites, *Tetranychus urticae*, on Marigolds (*Tagetes erecta* 'Exel Primrose'). Charles P. Hasselein, Joseph R. Chamberlin and Michael L. Williams.
- AL 141-149 Evaluating Orthene TTO 75 SP Drenches and Pinpoint 15G Formulations for Phytotoxicity to Selected Herbaceous Ornamental Plants. Charles P. Hasselein, Joseph R. Chamberlin and Michael L. Williams.
- MD 150-153 IR-4 Research for Pest Control in Nursery Crops- 1997. J. Ray Frank.
- TX 154-157 Biological Control Approaches for Southern Nursery and Greenhouse Growers. Kevin M. Heinz.
- TN 158-161 An Evaluation of New Insecticides for the Control of a Maple Shoot Borer, *Proteoteras aesculana* Riley (Lepidoptera: Tortricidae) in Seedling Red Maple. F. A. Hale, C. Mannion and M. Halcomb.
- FL 162-165 Evaluation of Insecticides to Control the Asian Ambrosia Beetle *Xylosandrus crassiusculus*. Russell F. Mizell, III, Alejandro Bolques and Philip Crampton.
- GA 166-169 Control of Thrips and Fungus Gnats in Potting Media. Scott W. Ludwig and Ronald D. Oetting.
- VA 170-171 Evaluation of Controls for Boxwood Leafminer. P. B. Schultz and C. S. Whitaker.
- AL 172-174 Outdoor Labeled Miticide Evaluation for Control of Southern Red Mite. J. C. Stephenson.
- NC 175-178 Biorational Plant Protectants for Controlling Adult Japanese Beetles. J. Dale Witt, Thomas G. Ranney, Stuart L. Warren and James R. Baker.
- KY 179-182 What Factors Affect Twospotted Spider Mite Populations on Burning Bush? Nicole R. Mason, Daniel Potter and Robert McNeil.
- GA 183-187 Whole Plant CO<sub>2</sub> Exchange Measurements on Azaleas Injured by Azalea Lace Bug Feeding. W. E. Klingeman, G. D. Buntin, S. K. Braman. and M. W. van Iersel.

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TN	188-190	Management of Insects and Mites on Nursery Stock with Soybean Oil. Aaron L. Lancaster, Dennis E. Deyton, Carl E. Sams, Charles D. Pless, Donna C Fare and Mark Halcomb.
FL	191-193	IPM Scot Training in Florida. Liz Felter.
TN	194-197	<i>Tiphia Vernalis</i> , a Parasitoid of Japanese Beetle. Catharine Mannion.
KY	198-199	Cicada Damage to <i>Cornus florida</i> . Winston Dunwell and Dwight Wolfe.
TN	200-201	Strategy for Effective Control of a Maple Shoot Borer, <i>Proteoteras aesculana</i> Riley (Lepidopera: Tortricidae), in Red Maple. F. A. Hale and M. Halcomb.
OR	202-205	Evaluation of Tree Soil-Applied Insecticides for root Weevil Control In Container-Grown Nursery Crops. Robin L. Rosetta, Sven E. Svenson and Neil C. Bell.

### **PATHOLOGY & NEMATOLGY**

TN	208-210	Co-Culture of <i>Microsphaera pulchra</i> and <i>Cornus florida</i> (Flowering dogwood) Microshoots. L. A. Klein, M. T. Windham and R. N. Trigiano.
TN	211-212	'Appalachian Spring': A New Flowering Dogwood Cultivar Resistant to Dogwood Anthracnose. M. T. Windham, E. T. Graham, R. N. Trigiano and W. T. Witte.
AL	213-216	Influence of Application Timing with a Fungicide on the Control of Entomosporium Leaf Spot on Cultivars of Indian Hawthorn. A. K. Hagan, K. L. Bowen, J. R. Akridge and J. W. Olive.
AL	217-220	Susceptibility of Cultivars of Indian Hawthorn to Fireblight Anthracnose and Entomosporium Leaf Spot. A. K. Hagan, J. R. Akridge, J. W. Olive and K. Tilt.
AL	221-222	Evaluation of Selected Fungicides for Control of Powdery Mildew of Dogwood. J. W. Olive, A. K. Hagan and Leonard C. Parrott.
TN	223-227	Biorational Products for Powdery Mildew Disease Management for Dogwood ( <i>Cornus</i> spp.). Margaret T. Mmbaga.
SC	228-232	Controlling Rust on Zonal Geraniums with Fungicides. Steven N. Jeffers and Lynn A. Luszcz.
SC	233-237	Extraction and Analysis of Common Nursery Pesticides From Runoff Water. Melissa Riley, Rosemary Cancro and Ted Whitwell.
TN	238-239	Black Spot Management on Hybrid Tea Rose 'Peace'. A. S. Windham and M. T. Windham.
TN AL	240-243	Transport of Entomogenous Nematodes in Porous Media. Sam O. Dennis, Robert E. Harrison and Teferi Tsegaye.
SC	244-246	Occurrence of <i>Phytophthora</i> spp. Woody Ornamentals in South Carolina Nurseries. D. T. Ducharme and S. N. Jeffers.

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TN	247-248	Survival of Conidia of the Dogwood Anthracnose Fungus Through the Digestive System of an Insect. Bryan Hed, Mark T. Windham and Jerome F. Grant.
TN	249-250	A Viral Disease of <i>Chionanthus virginicus</i> associated with Tomato Ringspot Virus. A. S. Windham, M. T. Windham, W. T. Witte, P. Flanagan and H. P. Conlon.
TN	251-252	Chemical Control of Powdery Mildew in Flowering Dogwood. M. T. Windham, A. S. Windham and M. A. Halcomb.
TN	253-261	Winter Survival and Source of Primary Inoculum for Powdery Mildew of Dogwood. Margaret T. Mmbaga and Hongyan Sheng.

### ENGINEERING, ECONOMICS, STRUCTURES & INNOVATIONS

GA	264-267	Using Industry Data to Evaluate the Grower-Wholesaler's Financial Performance. Forrest Stegelin.
GA	268-271	Structural Change in the Nursery Industry: Mergers and Acquisitions Versus Internal Growth. Steven C. Turner and Forrest Stegelin.
TX	272-275	Economic Analysis of Producing Selected Plant Species Using Containers Treated with Spinout. Charles R. Hall, Michael A. Arnold, Steven P. Obst and Douglas F. Welsh.
FL	276-280	Internships - Reflections of the Environmental Horticulture Industries. Dennis B. McConnell and Svoboda V. Pennisi.

### GROWTH REGULATORS

NC	282-285	Increasing Flowers in Container Grown Hybrid Rhododendron. Richard E. Bir and Joseph L. Conner.
GA	286-290	Greenhouse and Landscape Evaluation of Perennial Bedding Plants Treated with Three Plant Growth Regulators. Paul A. Thomas, Joyce G. Latimer and Sherrod A. Baden.
AL	291-293	Shasta Daisy Response to Photoperiod and Vernalization. J. Raymond Kessler and Gary J. Keever.
VA	294-296	Growth retardants promote branching, control growth of <i>Perovskia</i> (Russian Sage). T. J. Banko and M. A. Stefani.
AL	297-299	Plant Growth Retardants Affect Growth and Flowering of <i>Coreopsis rosea</i> . S. E. Burnett, G. J. Keever, J. R. Kessler and C. H. Gilliam.
AL	300-302	Root Mass and BA Affect Offset Formation in <i>Hosta</i> . H. C. Schultz, G. J. Keever, R. R. Dute, J. R. Kessler and J. W. Olive.
SC	303-305	Benzyladenine Induces Branching in Eleven New <i>Hosta</i> Cultivars. Matthew P. Hoover, Jason B. London, William B. Miller, Gary Legnani and R. Thomas Fernandez.
SC	306-309	Photoselective Greenhouse Covers for Plant Growth Regulation. Anuradha Tatineni and Nihal C. Rajapakse.

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NC	312-314	How and When Herbaceous Cuttings are Stuck Influences Winter Survival. Richard E. Bir and Joseph L. Conner.
SC	315-317	Propagation of <i>Magnolia grandiflora</i> 'Little Gem' by Stem Cuttings. Mark J. Arena, Gary J. Hockersmith and Craig H. Spencer.
NC	318-319	Influence of Storage Temperatures on long-term Seed Viability of Selected Native Ericaceous Species. Christopher T. Glenn, Frank A. Blazich and Stuart L. Warren.
SC	320-323	Low Temperature Storage of Micropropagated Hosta Plantlets Under Various Light Qualities. Sandra B. Wilson, Nihal C. Rajapakse, and Roy E. Young.
TN	324-326	Prospects for Hybridization of <i>Hydrangea macrophylla</i> and <i>H. paniculata</i> . Sandra M. Reed
TN	327- 329	Effect of Penetrating Agents and Quick Dip IBA/NAA on Rooting of 'Nellie R. Stevens' Holly. David S. Vandergriff and Willard T. Witte.
AL	330-332	Impact of Shade on Propagation of Golden Barberry. Brian H. Murphree, Jeff L. Sibley and D. Joseph Eakes.
AL	333-336	Effect of Runner Plantlet Size on Propagation of Strawberry. Timothy D. Crawford, Jeff L. Sibley and David G. Himelrick.
NC	337-339	Improving Adaptability of European Beech with Stress-tolerant Rootstocks. Keith D. Cote, Stuart L. Warren and Thomas G. Ranney.
NC	340-343	Propagation of <i>Magnolia virginiana</i> 'Santa Rosa' by Stem Cuttings. Jason J. Griffin, Frank A. Blazich and Thomas G. Ranney.
AL	344-346	Influence of Liriope Division Size on Subsequent Growth. Christine K. Hayes, Charles H. Gilliam, Gary J. Keever and D. Joseph Eakes.
TN	347-349	Effect of Timing and Frequency of Controlled Pollinations on Seed Set in Flowering Dogwood. Sandra M. Reed.
TN	350-352	Propagation of <i>Cephalotaxus</i> Cuttings. David O'Nan, David S. Vandergriff and Willard T. Witte.
OR MI	353-364	Evaluation of <i>Prunus Cerasus</i> Germplasm for Cold Resistance. Hannah M. Mathers and A. F. Iezzoni.

### WEED CONTROL

NC	366-369	Postemergence Weed Control in Dormant Herbaceous Perennials. Joseph C. Neal and Robert E. Wooten.
AL MS & TN	370-374	Weed Control for Pot-In-Pot Production. Donna C. Fare Patricia Knight, Charles H. Gilliam and Mark Halcomb.

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SC	375-379	Preemergence Herbicides for Perennials. Ted Whitwell, Garry Legnani and Russell Smith.
AL	380-383	Postemergence Control of Bittercress. James Altland, Charles Gilliam and John Olive.
SC	384-387	Simazine Uptake and Distribution by <i>Canna hybrida</i> 'King Humbert' - Implications for Phytoremediation. Chris Wilson, Ted Whitwell and Steve Klaine.
KY	388-391	Taxus Response to differential Concentration and Timing of Pedimethalin Application. Robert E. McNiel, Kimberly Collins and Mark Czarnota.
TN	392-395	Effects of Herbicides on Selected Perennials. Theodore R. Murphy and Donna Fare.
OR	396-402	Suppression of Liverwort Growth in Containers Using Irrigation, Mulches, Fertilizers and Herbicides. Sven E. Svenson.
TN	403-406	Development of Herbicide Resistant 'Stella de Oro' Daylily Using Genetic Engineering. J-T. Ling and R. J. Sauve.
SC	407-410	Preemergent Bittercress Control on Gravel Beds. Jeanne Briggs, Ted Whitwell, Garry Legnani and M. B. Riley.
KY	411-418	Weed Control in Commercial Nurseries with EC and Granule Formulations of Thiazophy. Mark Czarnota, Jacob Barney, Kimberly Collins, Rose Harmon and Robert McNiel.

### LANDSCAPE

NC	420-422	The Revitalization of Landscape Gardening. M. A. Powell.
NC	423-425	Obtaining and Sharing New Plant Germplasm. Andrew Bell.
LA	426-430	Effect of Mowing Height and N and K Rate on 'Palmetto' St. Augustinegrass. James N. McCrimmon.
LA	431-435	Effect of Nitrogen and Potassium on 'El Toro' Zoysiagrass. James N. McCrimmon.
AL	436-438	Ornamental Crabapples Cultivar Recommendations for Plant Hardiness Zones 6 and 7. H.P. Conlon, W.T. Witte, K.M. Tilt and M.T. Windham.
GA	439-441	Evaluation of Deciduous Azaleas ( <i>Rhododendron</i> spp.) for Cold Hardiness Potential. S. M. Scheiber, O. M. Lindstrom and C. D. Robacker.
NC	442-445	Heat Tolerance in Perennial Salvias. F. Todd Lasseigne, Stuart L. Warren, Frank A. Blazich and Thomas G. Ranney.
SC	446-449	Drought Stress Affects Leaf Gas Exchange and Spring Growth of Herbaceous Perennials. Kelly J. Prevette and R. Thomas Fernandez.

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FL	450-452	Extension Workshops Improve Floridians' Adoption of Environmental Landscape Management Practices. Gary W. Knox and Glenn D. Israel.
GA	453-455	Research and Education Garden: Pollution Prevention for the Landscape. Susan M. Varlamoff and Joyce G. Latimer.
LA	456-459	Landscape Evaluation of Lantana Cultivars - 1997. Allen D. Owings and Kris M. Leader.

### MARKETING

TX	462-463	Writing for the Popular Press. David L. Morgan.
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