Winston C. Dunwell  
Department of Horticulture  
Extension Professor of Horticulture - Nursery Crops  
Responsibilities and Programs Narrative

I am an Extension Specialist for the University of Kentucky Department of Horticulture - Nursery/Landscape Program.

I am responsible for:

1. Developing educational programs related to ornamental plant introduction, propagation, production, and utilization;
2. Coordinating the educational programs with ornamental horticulture and related, specialists, researchers, instructors, teachers, and industry representatives to ensure the development of the ornamental horticulture industry in Kentucky;
3. Disseminating nursery/landscape information for extension agents, nursery-grower/landscape and extension clientele, students, and consumers, by appropriate means; to include publications, utilization of mass media communications, educational conferences, demonstrations (Appendix A) and preparation of appropriate training aids;
4. Sharing information and performing horticultural consultations and diagnostic services through visitation to nurseries;

I serve as the **Department of Horticulture Coordinator for the University of Kentucky Research and Education Center** (UKREC), Princeton, KY. I coordinate Ornamental, Vegetable and Fruit Research Programs (I oversee fruit research during the fruit/vegetable specialist position vacancy June 1999-June 2002 and 2008-present). Responsibilities include budgeting for labor and supplies, supervising and evaluating two Extension Associates for nursery crops, an Extension Associate for vegetables and fruit, a research specialist, two technicians, and part-time and summer employees.

I serve as the **Department of Horticulture Nursery Crops Coordinator** for funding from the UK Nursery/Landscape Fund ($39000), New Crops Opportunities Center-Nursery Crop Development ($185,020) and Kentucky Horticulture Council, Inc. phase one Tobacco Settlement grant ($1,736,899).

Public presentations and Extension worker in-service training are given in my area of expertise (See Appendices B & C)

Mass media productions, seminars and community development are a part of my activities related to Extension programming (for examples see Appendix G).

Traditional consultation by phone, electronic mail, and one-on-one visits with industry representatives and response to nursery/landscape informational inquiries is performed daily.
Status of the Nursery/Landscape Industry

The 2007 US Census of agriculture states the Nursery, Greenhouse, and Sod industries contribute almost $17 Billion (6% of US Ag.) to the economy. The 1997 Census of Agriculture states Kentucky nursery and landscape industry contributed 408 million dollars to Kentucky’s economy. The Kentucky Department of Agriculture and the Kentucky Horticultural Council, Inc. have recognized that the component parts of the industry are undervalued and have asked for funding to collect the needed economic data.

Land and water resources and their relatively low cost, added to ready access to major highway systems make Kentucky an ideal location for nursery production. Kentucky has soils that are excellent for field production because the clay loams produce quality field-grown plants and hold together well for ball and burlap mechanical harvest, handling, and shipping. Sandy soils found in Kentucky are ideal for pot-in-pot and bareroot production systems which require good drainage and soils that are easily removed from the plant root system.

Selling to the north is the best option for large wholesale growers that want to take advantage of the reduced cost of production that results from our longer growing season. Plants grow faster in Kentucky than in growing areas of northern Ohio, Illinois, Wisconsin or Minnesota. The reduced time in the field saves costs of production allowing Kentucky nurseries to competitively price their products for northern markets and receive significantly more than if they sold their plants in Kentucky. Large Kentucky nurseries have started to cooperatively market and buy needed resources to further their competitive advantage in an increasingly competitive wholesale export market.

To maximize returns for smaller nurseries it is to their advantage to grow in containers (more plants produced per acre). Plants such as flowering small woody trees, Japanese Maples, recently introduced high-priced cultivars of herbaceous perennials such as, daylilies or hosta, and specially developed plants (breeder’s introductions) for the connoisseur market, can be grown in small quantities and command a high price and high return per plant.
Nursery/Landscape Extension and Applied Research Programs

Two major programs: Nursery Crop Production and Nursery Crop Development, address the needs of the different clientele groups; large wholesale field nurseries and small wholesale and retail nurseries.

Nursery Crop Production

A Nursery Crop Production Extension Program was established at the beginning of my tenure in the Department of Horticulture. The goal of the program is to provide growers with the necessary information that leads to growing quality plants profitably, efficiently, and in an "environmentally friendly" system.


Featured topics include: Water Quality Considerations; Irrigation and Fertigation; Organic Solid Waste Utilization; and Preventative Pruning of Woody Ornamentals and Fruit. The objective was to provide educational programs and resource materials that tied together optimal production practices and Integrated Pest Management practices for woody plants (fruit and Ornamentals).

The availability of Best Management Practices: A Guide for Producing Container-Grown Plants (Yeager, Tom, et al. Winston C. Dunwell, a contributing editor, 1998) and the need for a Best Management Practices educational program for nursery producers/landscapers/garden center operators resulted in a successful application to the Kentucky Department of Agriculture for a Value-added Grant to pay for BMP Guides and to bring the authors as speakers in 2000.

BMP workshops have been presented at Kentucky Landscape Industries meetings 1999, 2000, 2001, & 2002, and in west Kentucky in the Spring from 2002 - 2010. The program was expanded in 2002 to include a duplicate program in Louisville until 2008. Funding from The Charles E. Barnhart Fund for Academic Excellence and Integrated Pest Management has been secured to provide special topics speakers since 2002. The successful programs generate funding to assist in future development.

Annual BMP workshop participant surveys indicate the program has resulted in the production and sales of better quality plants with fewer pesticides and fertilizers being used (100% altered their production practices and 95% saved money, fertilizer, labor and/or water). A recent survey in Landscape Management stated that 71.1 percent of customers are prepared to pay more for quality. BMP workshops are giving the Kentucky nursery/landscape industry a competitive opportunity to produce a quality product that will provide a higher return (profit) to the grower, landscape contractor, garden center operator and landscape maintenance firms. (See


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Appendix D).

I serve as Chair of the Kentucky Certified Nurseryman program of the Kentucky Nursery and Landscape Association. This position has required editing a 20-year-old manual and rewriting tests and test evaluation documents.

Nursery/Landscape Web Site <http://www.ca.uky.edu/HLA/Dunwell/NLgetstart.html>
In response to increased demand for information about the nursery/landscape industry, specifically how to get started in the nursery/landscape industry, a informational web site was posted in January of 1999. A positive response, 350 hits per month, lead to the web site being expanded and incorporated into the activities of the Nursery Crop Development Center (Digital Publications in Vita and <http://www.ca.uky.edu/HLA/Dunwell/win1.html>).

The Web Site’s function has expanded to include sharing information and images and archiving Nursery related newsletters HortMemo, Nursery Update and West Kentucky Nursery Update.

Peers that do not have a location to share educational materials have offered the use of their publications for this site. Examples of peer publications posted to the site are Physical and Economic Requirements for Pot-in-pot Nursery Production by my coworker Dr. Robert McNiel, et. al., Pot-in-pot bibliography by John Ruter (GA) and Sven Svenson (OR/AK), Tennessee Liner Nurseries by Mark Halcomb (TN) & Ken Tilt (AL), Tips - When a rose is a Rose™: Naming and Protection of New Plant Varieties by Dr. Paul Cappiello, UKCA Adjunct Horticulture Professor, Yew Dell Gardens.

Nursery Soybean Cyst Nematode Certification Program: Exportation of Kentucky grown landscape plants was not allowed to Soybean Cyst Nematode free states or Canada. A program to alleviate the problem shipping to states and Canada with Soybean Cyst Nematode quarantines was developed by a cooperative effort with other Extension Specialists and the Kentucky Nursery Inspector that resulted in a certification program acceptable to the states and Canada. A publication, certification form and testing requirements with the UK Nematology lab were worked out in cooperation with the Kentucky Nursery Inspector and states and Canada with import restrictions. The pro-active program is established and functions as needed. The SCN-Nursery team still functions to answer nursery owner/manager questions about managing fields that have had soybeans as a crop and recently was updated to provide tests specific to SCN. (See Appendix E).

Nursery Production System Demonstrations: Nursery production demonstrations were moved to a new nursery site in 1992. Demonstrations since that time include: shade tree pruning, field production fertilization, insect management (potato leaf hopper) in shade tree production, field production of daylilies and hosta, and a pot-in-pot production system demonstration with controlled-release fertilizer and cyclic micro-sprinkler irrigation system. The pot-in-pot demonstrations provided the opportunity for people attending UKREC Field Days and others during the growing season to study the technologically advanced system in a publically available site. This was a cooperative project with Dr. Bob McNiel and Amy Fulcher supported by Nursery/Landscape Fund, New Crop Opportunities (NCO)- Nursery Crops and Kentucky Horticulture Council, Inc. grant funds. The interest in nursery production as a

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new crop opportunity has resulted in the this project being expanded with funding from the Kentucky Horticulture Council Inc. in the form of funding for UKREC Extension Associate, Amy Fulcher, Extension Associate for Nursery Crops, Lexington, KY shares information gathered through her newsletter *Nursery Update - A University of Kentucky Cooperative Extension Service update for the Kentucky Nursery Industry*, <http://www.ca.uky.edu/HLA/Dunwell/KHC/NurseryUpdate.html> and Carey Grable, Extension Associate for Nursery Crops, Princeton, KY produces a sister publication *West Kentucky Nursery Update* <http://www.ca.uky.edu/HLA/Dunwell/WestKentuckyNurseryCrops.html>.

**HortMemo**, my monthly Ornamental Horticulture newsletter established in 1992 has a national following <http://www.ca.uky.edu/HLA/Dunwell/HortMemo.html>. HortMemo’s purpose is to notify new and existing members of the nursery/landscape industry of educational opportunities in the Upcoming Meetings section and to keep in touch with the opening page news items. The only other news source is the quarterly KNLA Nursery Views that is not timely for meeting announcements. It is delivered to almost 1000 by e-mail, 50 by post, 157 extension workers in Virginia, and is the basis for several newsletter’s meetings lists including Auburn’s *Something to Grow On* newsletter which goes to 160 Extension workers and results in approximately 3100 hits on their web site per month, the International Plant Propagator Society *Plant Propagator* newsletter, and Kentucky Nursery and Landscape Association *Nursery Views*. Extension Specialists in other states forward it to their distribution lists. The HortMemo archives <http://www.ca.uky.edu/HLA/Dunwell/HortMemo.html> and *HortMemo Meetings* <http://www.ca.uky.edu/HLA/Dunwell/HMMeetings.html> web sites receive an average of 500 hits per month.

**Kentucky Nursery/Landscape Association Support**. I serve and/or have served as an advisor to: The Kentucky Nursery and Landscape Association (KNLA), The Kentucky Arborists’ Association, The West Kentucky Chapter of the KNLA, and The West Kentucky Landscape Maintenance Association.

**Nursery Crop Development Center**

I established The Nursery Crops Development Center (NCDC) to be a part of, and to compliment, the Nursery Production Extension Program. The Nursery Crops Development Center (NCDC) objective is to evaluate and develop plants that satisfy the need for diversity in the nursery plant offerings and give the smaller nursery a competitive advantage with specialty plants for the connoisseur market and offer alternative crops to new and existing growers. The primary emphasis of this program is to develop plants that are ornamental and environmentally superior to those currently available to the nursery/landscape industry and their clientele. Activities include evaluating, developing, and promoting landscape plants through applied research and educational programs that address plant production, utilization, and maintenance in “environmentally friendly” systems (Best Management Practices). Specific programs have been: Kentucky’s Theodore Klein Plant Award Program; Kentucky Hybridizer Daylily evaluation program; and Native Plant Development program. Gathering resources for the NCDC was assisted by taking an active role in related programs. Serving as Chairman for SERA/IEG -

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27 and Chairman of the New Crop Opportunities Center Nursery Project provided funding and information exchange avenues.

**SERA - 27 Chairmanship** (Southern Extension and Research Activities/Informational Exchange Group-27: Nursery Crop and Landscape Systems). During my tenure as Chairman I took a very active leadership role to promote the activities of the group and to gather the representatives to evaluate our work and impact. I gave a presentation, *SERA/IEG - 27: Nursery Crop and Landscape Systems; Plant Evaluation at the Southern Region American Society for Horticultural Sciences*, authored a HortTechnology 11(3): 373-375 referred publication *Plant Evaluation Program: SERA/IEG – 27: Nursery Crops and Landscape Systems*, and prepared historical documents: 1. minutes of IEG-63 and Sera/IEG - 27 since the first organizational meeting; 2. a compilation of all the plants in evaluation for future planning and new members, <http://www.ag.auburn.edu/landscape/SERAmemo6-26-01.html>. An important component of the evaluations is that the group is attempting to numerically evaluate plants. Industry representatives and gardeners have responded to my presentations with excitement about the possibility of having a simple numerical evaluation rather than lengthy observational narratives. The evaluation program has had 32 plants in evaluation and the group is preparing final reports on them. The reports are available to the public via the SERA/IEG-27 web site, http://www.lsuagcenter.com/en/administration/about_us/professional_organizations/sera_ieg_27/index.htm Active participation in the SERA/IEG has created a network devoted to learning more about woody and perennial plants and expanding the NCDC plant evaluation program.

**Kentucky’s Theodore Klein Plant Award Program.** In 1995 I made a presentation to the Kentucky Nursery and Landscape Association board of directors asking for their support of a plant award program to select and promote outstanding ornamental woody and perennial plants for Kentucky Landscapes. The goals of the Theodore Klein Plant Award program are: to promote enthusiasm for and interest in plants among gardeners; to encourage development of new cultivars and hybrids by Kentucky Nurserymen; to increase the recognition, reputation, and profitability of the Kentucky nursery and landscape industries. The Kentucky plant award program is named to honor the late Theodore Klein who owned Yew Dell Nursery, Crestwood, KY and is sponsored by the: University of Kentucky Nursery/Landscape Program, Yew Dell Gardens, the Kentucky Department of Agriculture, and the Kentucky Nursery and Landscape Association. 1999 was the first year of promotion to the public. A [Kentucky Department of Agriculture value-added grant secured](http://www.ca.uky.edu/HLA/Dunwell/TKleinPA.html) in February 1999 was used: (1) to develop point-of-purchase promotional materials to highlight the program (posters and banners); and (2) to establish Theodore Klein Plant Award gardens at the UKREC, Princeton and Bernheim Arboretum, Clermont. Kentucky’s Theodore Klein Plant Award winners are announced at the Kentucky Landscape Industries Winter Conference and Trade Show in January. The nursery/landscape industry is notified of the award winners through *HortMemo* and the KNLA Nursery Views Newsletter. Sixty-three plants have been selected as Kentucky Theodore Klein Plant Award Winners. The program and plants are highlighted in Appendix F and <http://www.ca.uky.edu/HLA/Dunwell/TKleinPA.html>.

**Native and Cultivated Plant Development** is designed to locate, propagate, evaluate, introduce, and distribute plants that show significant potential to create a marketing advantage.
for Kentucky nursery/landscape enterprises. **NCDC Native Plant Introduction Program.**

‘Kuttawa’ Indian Pink, *Spigelia marilandii*, a native flowering herbaceous perennial will be distributed in 2002 to selected county Extension gardens and Kentucky botanic gardens and arboreta. Introduction and development of Kentucky provenances of **Kentucky native Willow Oak, Quercus phellos**, could result in an increase in efficiency for Kentucky nurseries. Currently, nursery losses to 50% or more are attributed to a lack of hardiness in Willow Oak liners grown from southern seed sources. A liner is the transplant put into field or container production systems to be grown to landscape size. Utilizing a Kentucky clone of Willow Oak could reduce the losses. Research by Dr. Robert Geneve funded by the Nursery/Landscape Fund has shown willow oak can be propagated by cuttings (not previously thought possible). This will allow selections of Kentucky willow oaks, known to have greater hardiness, to be readily propagated, grown and shipped as a landscape-size plant to the northern markets. Research in cooperation Dr. Bob McNiel has been started to study liner production protocols specific to Kentucky willow oak selections and Kentucky’s growing environment. A *Quercus phellos* seed orchard has been established at the UKREC, Princeton. The goal is to have a Kentucky cultivar/selection that can be readily asexually propagated, grown to landscape size in less time than currently required, and be promoted as a Kentucky specialty plant. We have completed several steps in the process. Other plants being studied for development: A weeping selection of *Nyssa sylvatica*, Blackgum, has been discovered, and work is ongoing with difficult to propagate and grow, *Cimicifuga racemosa*, Cohosh, Black Snakeroot, bugbane.

**The NCDC Kentucky Plant Distribution Program** distributed KY hybrid daylilies, Irises, and woody ornamental plants to 16 KY counties for evaluation and use in developing county demonstration gardens, the UK Arboretum, 13 SERA/IEG - 27 cooperators and selected industry representatives. To date 459 plants have been distributed in Kentucky and 88 to SERA/IEG - 27 cooperators. The objective is to have plants developed in Kentucky evaluated over a wide range of conditions and displayed to the public as a promotional tool. Should a broad tolerance of environmental conditions be found in a given plant a large market area would be available to Kentucky nurseries that grow the plant. Reports to date have been published in the annual UK Nursery and Landscape Program Research Report. (Lists of distributed plants are available upon request).

**Kentucky Hybridizer Daylily evaluation program.** Major Kentucky breeders of daylilies have shared their introductions with the NCDC for further landscape evaluation and display. The daylily evaluations are in garden beds that attract visitors to the UKREC Botanic Gardens. The visitors then see other displays such as those in “Plants for Kentucky Gardens” displays. (See Vita: Research Reports below)

**Woody and herbaceous perennial ornamental plant evaluations** at the UKREC Botanic Gardens and horticultural research nursery are in cooperation with: SERA/IEG - 27 (evaluate plants received from cooperating states and in return have Kentucky introduced plants evaluated in those states), Bernheim Arboretum [develop propagation and production protocols for Hollies (NCO)and evaluate landscape plants, Buddleia, magnolia, etc] , U.S. National Arboretum (plant evaluations), Landscape Plant Development Center (plant evaluations), Arnold Arboretum (plant development), Morton Arboretum (DNA testing of *Frankliniana altamaha*),
Kentucky nurseries (daylilies, iris and hostas) and commercial plant evaluation programs. The goal is to find plants to diversify the product mix of Kentucky growers. Eighty-five daylilies, seven hostas (all hostas are shade loving, but are frequently grown in field nurseries, and in the landscape, in full sun. In our trials two currently popular and expensive hosta cultivars, ‘June’ and ‘Patriot’ are intolerant of sunny sites and cannot be grown in the field without shade and will be unsuccessful in the landscape in full sun. Two of the hostas, ‘Francee’ and ‘Golden Tiara’, have proven tolerant of a wide range of environmental conditions and are recommended for Kentucky Gardens). Five of the twenty-two SERA/IEG - 27 plants in evaluation have been found hardy in Kentucky and one non-hardy plant, *Bulbine caulescens*, has yellow flowers and great potential as an annual for the landscape or a pot plant (10 are still under evaluation and three have failed).

**Cut-Flower Project: Specialty Cut Flower and Cut Stem Evaluations** are a statewide multi-site cooperative effort:

*Hydrangea* for cut flowers are being investigated as a diversification/alternative crop in cooperation with Sharon Bale, Terry Jones and Robert McNeil. Hydrangea cut flowers were sent to the Nashville Floral Market to attempt to find out if they are a marketable product and, if so, how much could we expect per stem (*H. Macrophylla* types were at $1.50 per stem, we expect $3.00 per stem for white types in a local market). To promote Hydrangeas as cut flower, stems were provided for the Central Tennessee Professional Florists’ Association Floral Design Program *Something Mystical*: “Design, Display and Merchandising”, Henry Phillips, Floral Designer. Interest expressed by UKREC visitors in the cut flowers and stems displayed in the UKREC lobby indicates additional research/evaluation is justified. This work has been completed at the NCDC but continues at the UK Horticulture Research Farm, Lexington, KY.

*Butterfly Bush, Buddleia* for cut flowers. The second largest collection of *Buddleia* cultivars in the United States was established at the UKREC and was used to evaluate cut flower and landscape potential. Initial results indicate many cultivars are not hardy in Kentucky, the flowers while desirable in the Nashville Farmer’s Market are difficult to handle. Within our plots we have found *Buddleia davidii*, a commonly grown landscape species, to be invasive. Invasiveness is a cause for termination in any evaluation. Evaluation to confirm the nature of the invasive habit will be done.

**University of Kentucky Research and Education Center Botanic Garden** (see [http://www.ca.uky.edu/HLA/Dunwell/gardenslib.html](http://www.ca.uky.edu/HLA/Dunwell/gardenslib.html) and [http://www.garden-open.com](http://www.garden-open.com)) The Landscape designed by Dr. Thomas Neiman, UK Landscape Architect Faculty, and installed under my direction in 1980's was designated The UKREC Botanic Gardens in 1993 when the objective of the center landscape was expanded from purely ornamental to include a plant evaluation program and to serve as an educational tool. The UKREC Botanic Garden is a plant study site for the nursery industry, consumers, and Master Gardeners. Master Gardeners help maintain the site. It contains the largest collection of Kentucky introduced daylilies (breeders Willie Wilson, Mitchell Leichhardt, Casey and Cindy Schott, Joe Swanson and John Rice), the largest collection of Dr. Herbert Mohr (past-department chair of UK Horticulture) and sons, David and Kenneth, award winning Irises, including Dr. Mohr’s ‘Dyke’s Award Winner’ (internationally recognized annual Iris award) ‘Bride’s Halo’, and in collaboration with Dr. Paul Cappiello, Horticulture Director of Yew Dell Gardens had the second largest collection of

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*Buddleia* (since removed) in the United States. Master Gardeners, lead by two county horticulture Extension agents, assist in maintaining the gardens and research plots. The Gardens support (plants, supplies, and information) county Extension agents efforts to develop similar demonstration gardens to serve as educational tools in their county and area.
Appendix A: 2002 University of Kentucky Research and Education Center Horticulture Group and Horticulture Group Research and Demonstrations

UKREC Horticulture Faculty Staff
Winston C. Dunwell, Extension Specialist Nursery Crops, UKREC Horticulture Coordinator
Joseph Masabni, Extension Specialist -Fruit and Vegetable Crops -Weed Control Specialist
Dwight Wolfe, Horticulture Research Specialist
Shane Bogle, Extension Associate - Vegetables and Fruit
Amy Fulcher, Extension Associate - Nursery Crops
June Johnston, Horticulture Technician
Hilda Rogers, Horticulture part-time Technician
Jessica Coffey, 2001-2002 Summer Employee
Adam Woods, 2002 Summer Employee

2002 UKREC Horticulture Research and Demonstrations
Funding agency in bold following project.

Ornamentals
A. Nursery Crop Production Systems
   1. Pot-in-pot demonstration and systems research, Kentucky Horticulture Council, Inc.
   2. Rudbeckia trials, Kentucky Horticulture Council, Inc.
   3. Buddleia trials, New Crop Opportunities
   4. Hydrangeas for Cut-Flowers, Fresh Cuts and Dried: New Crop Opportunities
      a. H. paniculata cultivars: Irrigated vs Non-irrigated, Shelf life studies
      b. H. macrophylla cultivar trials
   5. Hosta in field production: New Crop Opportunities

B. Nursery Crop Development
   1. Native plants as Ornamentals: Willow Oak, Black Gum, Black Cohosh, Indian Pink, Button Bush, Red Buckeye, New Crop Opportunities and Nursery/Landscape Fund
   2. Plant Evaluation:
      b. Plants for Kentucky Gardens: Kentuckiana Greenhouse Growers and New Crop Opportunities
      c. Daylily Cultivar Evaluations
      d. All-American Selections Trials

C. University of Kentucky Research and Education Center Botanic Garden: Plant Study Site includes Ornamentals and Fruit

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**Fruit Research**, UKREC Orchard and Ornamentals/Small Fruit Research Field

A. Tree Fruit Projects
   1. Dwarf and Semi-Dwarf Apple Rootstock, *North Central Regional Project -140*
   2. Peach Rootstock Trial, *North Central Regional Project -140*
   3. Apple Training Project, *Kentucky State Horticulture Society*
   4. Paw Paw cultivar trials, *Kentucky State University /US Department of Agriculture*
   5. Pecan Cultivar Trial

B. Small Fruit Projects
   1. Blackberry Cultivar Trials, *New Crop Opportunities*
   2. Wine Grape Cultivar Trial, *New Crops Opportunities*
   3. Blueberry Cultivar Trial

**Vegetable Production Systems Demonstrations**
Appendix B: Extension Agent Training

Dunwell, Winston. June 20, 2008. UKREC Nursery Crops Development Center Research and Demonstration Plot Tour, Princeton, KY


Dunwell, Winston C. June 1, 2000. County Horticulture Agent Training: Propagation, Henderson, KY.


Dunwell, Winston C. February 21, 1995. Coordinator and presenter (one of six): Pruning Fruit and Ornamental Trees. Compressed Video at three KY Locations, originating location, Lexington, KY.

Dunwell, Winston C. November 15, 1995. Ornamentals to consider for Kentucky Landscapes. Owensboro, KY.


Dunwell, Winston C. March 24, 1992 Multi-Area (Green River, Pennyrile, and Purchase) EFNEP Assistants Home Gardening Update. UKREC, Princeton, KY.


Dunwell, Winston C. September 15, 1987. Coordinator of Vegetable and Fruit Extension Agent Training with farm tours and specialist presentations, UKREC, Princeton, KY.


Dunwell, Winston C. October 6, 1986. Commercial Vegetable Production. Simpson County, KY.


Appendix C: Presentations - Kentucky and Region


Dunwell, Winston. April 7, 2008. Landscape Plant Selection. Lyon County Master Gardener Training, Eddyville, KY.


Dunwell, Winston*. March 1, 2005. Getting started in the Nursery Business Workshop: Introduction; Field Production-Bare root and Balled and Burlap; Container Production: Above Ground and Pot-in-pot; Budget Analysis. UKREC, Princeton, KY.


Dunwell, Winston C. March 17, 2001 Trees in Our Landscape: Matching the Plant with the Site. Paducah, KY


Dunwell, Winston C. February 24, 2000. Plant Review for KCN Test. West Kentucky Chapter of the Kentucky Nursery and Landscape Association, Gilbertsville, KY.
Dunwell, Winston C. February 18, 1999. New and Best Tree and Shrubs Varieties, Tree Diversity and Use Guidelines, Selecting Trees and Shrubs for Various Landscape Uses. The Tri-State Nursery Landscape and Grounds Maintenance Committee, Cincinnati, OH.

Dunwell, Winston C. January 21, 1999. New and Interesting Woody Ornamentals. 1999 Professional Landscape Management School, Purdue University, Evansville, IN.


Dunwell, Winston C. March 1996. Pruning to Train Young Trees. Todd County


Dunwell, Winston C. November 1995. Construction Damage in the Landscape. 21st Annual Professional Landscape Management School. Purdue University, Evansville, IN.

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Dunwell, Winston C. 1995. Horticulture in Kentucky. All-Commodity Educational Program and Tour for Hungarian Extension Contingency Program with Murray State University.


Dunwell, Winston C. March 1995. Nursery Production as an Alternative. LaCenter, KY.


Dunwell, Winston C. January 17, 1995. Efficient Methods of Producing Squash From the Beginning to End. Southern Illinois Regional Vegetable School, Cobden, IL.


Dunwell, Winston C. June 14, 1994. Maintaining the Large Landscape. Professional Turf and Landscape Twilight Meeting. Purdue University, Evansville, IN.


Dunwell, Winston C. March 1, 1993. Tomato Production Meeting. Daviess County, Owensboro, KY.
Dunwell, Winston C. January 5, 1993. Pimento Pepper Production, Pest Control and Marketing. Daviess County, Owensboro, KY.
Dunwell, Winston C. March 1991. Plants for Problem Sites (2- 45 minute presentations). Fred Wiche's Garden Show, Louisville, KY.
Dunwell, Winston C. November 1990. Deans of Agriculture from Indonesia Tour of UKREC.
Dunwell, Winston C. Landscape Design and low Maintenance Planting for Fort Campbell Housing Areas. Fort Campbell, KY
Dunwell, Winston C. 1989. Trees and Shrubs for Kentucky Landscapes, Fred Wiche Garden Show, Louisville, KY.

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Appendix D: Best Management Practices For the Nursery, Garden Center, and Landscape (Optimum Resource Utilization For Horticultural Crops)

Situation
Kentucky’s environment is favorable for the growth of disease, insect and weed pests. To maximize growth Kentucky nurseries were applying fertilizer in excess of University of Kentucky recommendations. Kentucky soils are highly erodible. Surface applied pesticides and fertilizers travel with soils when they are eroded.

Issue/Problem
In the late 1980's and early 1990's issues environmental contamination by pesticides and fertilizers and food safety. The publicity surrounding these issues negatively impacted growers economic return on their management and capital investments.

Program
Dr. Gerald “Jerry” Brown and I discussed the issue and found that many of the environmental concerns affected fruit and nursery production similarly. Both crops where woody plants, required high levels of maintenance and demanded an excellent clean appearance to the finished product. We decided the best way to address the issue was to develop an Extension education program that concentrated on optimizing resources needed to grown fruit or woody ornamental plants. We wrote grants to help fund the program and provide speakers with expertise in “Optimum Resource Utilization” in fruit or ornamental plant production. The grant funding allowed for county Extension agents to attend the workshops with no registration fees. To maximize the impact of the effort the presentations and any relevant information was published in a proceedings that was shared with workshop participants, and county Extension agents and industry representatives unable to attend the workshops.

The program was altered to Best Management Practices for Nurseries, Garden Centers and Landscapes in the mid-1990s when the Best Management Practices Manual for Container Nurseries was completed. In response to the need for a program specific to the nursery/landscape/garden center industry a Best Management Practices educational program for nursery producers/landscapers/garden center operators was started. A Kentucky Department of Agriculture value-added grant was secured to support the BMP Clinics in 2000; it paid for the authors of the Best Management Practices: Guide for Producing Container-Grown Plants to give presentations at the Kentucky Landscape Industries BMP Workshop and subsidized the cost of the providing workshop participants with BMP Guides. BMP workshops have been presented at Kentucky Landscape Industries meetings 1999, 2000, 2001, & 2002, and in west Kentucky March 30, 2000, February 20, 2001, February 26, 2002. The program was expanded in 2002 to include a program in Louisville, February 27, 2002. The successful programs generate funding to assist in future development.

Impact and Future

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Annual surveys of BMP workshop participants indicates the program has resulted in the production and sales of better quality plants with fewer pesticides and fertilizers being used (100% altered their production practices and 95% saved money, fertilizer, labor and/or water). A recent survey in Landscape Management\(^2\) stated that 71.1 percent of customers are prepared to pay more for quality. BMP workshops are giving the Kentucky nursery/landscape industry a competitive opportunity to produce a quality product that will provide a higher return (profit) to the grower, landscape contractor, garden center operator and landscape maintenance firms.

Funding from The Charles E. Barnhart Fund for Academic Excellence has been secured by BMP Cooperator Amy Fulcher, Extension Associate - Nursery Crops, in the name of the UK Nursery/Landscape Program, to provide a special topics speaker on weed control in nurseries and landscapes for the February 17 & 18, 2003 BMP Workshops in Princeton and Louisville.

**Documentation**

documents in publications section or available on request


**Grants**


Michael, Donna, **Winston C. Dunwell**, and Debbie Cain. 1999. Value-added programs for the Kentucky Nursery industry. Kentucky Department of Agriculture, $30,000.

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Appendix E:  Nursery Soybean Cyst Nematode Certification Program

**Situation:**
Kentucky nursery production is primarily field production. The plants produced are mostly exported to states north of Kentucky and Canada. The pot-in-pot production system while growing the plant in a synthetic media in a container within a container (socket pot) in the ground still exposes the plant roots to field soils when roots escape the container. Kentucky is a soybean production state. Soybean Cyst Nematode (*Heterodera glycines*) is found in field soils throughout Kentucky. Soybean Cyst Nematode (SCN) bioassay to determine the presence of SCN takes 30 days and have been replace with new techniques.

**Issue/Problem:**
In 1989 two semi-truck loads of nursery stock from the largest field nursery in Kentucky were halted at the Canada border because they were from a state known to be infested with Soybean Cyst Nematode. Exportation of landscape plants with soil attached (ball and burlapped plants) was not allowed from states known to have SCN infected fields to a SCN-free state (s) or Canada. In this emergency situation an analysis of the previous land use found that Soybeans had not been grown on the property and a verbal certification of sanitation of the nursery plants from the Kentucky Nursery Inspector made it possible for the plants to reach their destination in Canada. A pro-active program to avoid future limits on exportation of field-grown plants was needed that was acceptable to all SCN-free states and Canada.

**Program:**
A cooperative effort with University of Kentucky Extension Specialists, the Kentucky Nursery Inspector, and nursery inspectors and state regulators in states and Canada currently free of SCN resulted in a certification program in which states limiting importation of nursery grown plants from SCN infected areas agreed to accept plants grown in fields tested and found to be free of SCN. To gain SCN-free certification on a Sanitary Certificate from the Kentucky Nursery Inspector requires that the soils be tested and found free of SCN. A publication, ID-110, on SCN and how to collect samples for testing and a specially prepared form to submit samples were developed. The SCN Nursery Submission Form can be provided to the Kentucky Nursery Inspector to certify plants from those fields and provide a Sanitary Certificate (indicates the nursery was inspected and found free of pests).

**Impact and Future:**
The pro-active program is established and functions as needed. The SCN-Nursery team still functions to answer nursery owner/manager questions about managing fields that have had soybeans as a crop and the value of SCN resistant soybean cultivars in cover crop/green manure rotations. For those Kentucky nurseries that do export (primarily to Canada) the SCN Certification program is critical to their continued growth and success. Without the SCN Nursery Certification Program they would lose a major market.

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3Personal communication, Colette Laurent, UKREC Nematology Laboratory Technician.

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The Kentucky Growers Group, a marketing group of the five largest nurseries in Kentucky, and the Kentucky West Nursery Cooperative, a cooperative of eighteen nurseries, are looking for new markets (outside the normal Ohio, Illinois, Indiana, and Michigan markets) for their field-grown nursery plants. They are interested in Colorado and other western states (Wilson and Crain\(^4\)) that require plants with soil balls have a Sanitary Certificate from the Kentucky Nursery Inspector that includes SCN-free Certification.

**Continued Promotion of the program:**
In order to maintain the program as pro-active I have added a program description to the *Getting Started in the Nursery/Landscape Industry* http://www.ca.uky.edu/HLA/Dunwell/NLgetstart.html and always mention using the SCN Nursery Certification program as a part of Best Management Practices (for Field Nurseries) Annual Workshops and the Best Management Practices program at the Kentucky Landscape Industries Winter Conference. The objective is to have new people in the industry test their soils before planting to ensure they start out growing in soils free of SCN and guarantee the ability to ship to SCN-free states. Those buying or leasing land for nursery production should test for SCN; buying or leasing SCN infected land could limit market availability and, ultimately, limit business growth and the value of the nursery.

**Program Documentation:**
(See Vitae for documents)

**AKES Outstanding Program Award.**  


\(^4\)Personal communication request by Charles Wilson, Kentucky Growers Group and Wilsons Nursery, Frankfort, to Hope Crain, Kentucky Nursery Marketing Specialist for the Kentucky Department of Agriculture, asking for a trade show exhibit promoting the Kentucky nursery industry and distributing the Kentucky Grown Landscape Plant Availability Guides at the *Western 2003: The Big Show* (Western Nursery and Landscape Association Trade Show).

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Appendix F: Kentucky’s Theodore Klein Plant Award

Situation
There were few plant award programs in the mid-1990's. Two, The Pennsylvania Franklin Styer Award for Gardening Excellence (now the Pennsylvania Horticultural Society Gold Metal Plant Award) and the Ohio Nursery Association Plant Selection Committee (PSC) selections, with very different selection methods were considered successful. States (Georgia and Texas) and regions (New England and Great Plains) were considering plant award programs.

Issue
Kentucky’s nursery/landscape industry and its associations are futuristic in their thinking and aggressively seek new projects that provide recognition of Kentucky as a quality nursery state. For example: it was one of the first to establish a certified nursery professional program <http://www.knla.org/certified.htm> to help promote the industry as one of trained workers and one of the first to produce a plant picture booklet (208 plant images and descriptions), specifically prepared for the consumer and used to help promote plants to the gardening public. It was felt by most I talked with that this might be an opportunity for Kentucky’s nursery/landscape industry to be recognized as one of the new leaders in the industry by being one of the first to have a plant award program to help promote the industry in and out of state. Kentucky is a relatively small nursery state and the program needed to be kept within the financial limits of the industry resources for long-term success.

Program
In 1995 I made a presentation to the Kentucky Nursery and Landscape Association board of directors asking their support for a plant award program to select and promote outstanding ornamental woody and perennial plants for Kentucky Landscapes. I selected a plant award committee made up of industry leaders in: the nursery production, landscape design, entertainment landscape development, newspaper photography/journalism, botanic garden horticulture, Zoo horticulture, garden center operations, the Kentucky and Landscape Association (the president) and academia to insure an impartial committee where no one interest prevailed, i.e., “I have a lot of ‘my plant’ I need to sell, so you need to name ‘my plant’ the award winner”, other than the selection of outstanding plants for Kentucky landscapes. The plants selected have to be “the best of the best”.

The committee chose to name the plant awards in honor of the late Theodore Klein, Yew Dell Nursery, Crestwood, KY. The plant awards are sponsored by the: University of Kentucky Nursery/Landscape Program, Bernheim Arboretum and Research Forest, and the Kentucky Nursery and Landscape Association.

The goals of Kentucky’s Theodore Klein Plant Award program are: to promote enthusiasm for and interest in plants among gardeners; to encourage development of new cultivars and hybrids by Kentucky Nurseries; to increase the recognition, reputation, and profitability of the Kentucky nursery and landscape industries.

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Plants are selected based on the following criteria. The plants nominated for consideration must be able to: be efficiently propagated and produced; be found established in Kentucky and at least two good examples of the plant be established within driving distance of a majority of the Kentucky population; and be pest resistant. Plants hybridized, selected, or introduced by Kentuckians will be given priority.

Plants are selected at least two years in advance of promotion to the gardening public. Kentucky’s Theodore Klein Plant Award winners are announced at the Kentucky Landscape Industries Winter Conference and Trade Show in January. The nursery/landscape industry is notified of the award winners through the KNLA Nursery Views Newsletter and provide images and descriptions on Kentucky’s Theodore Klein Plant Award web site <http://www.ca.uky.edu/HLA/Dunwell/TKleinPA.html>.

**Impact: The Present and the Future**

State Plant Programs sell more plants because of the awareness factor among consumers (Stegelin, et al.\(^5\)). The Theodore Klein Plant Award program will continue with emphasis given to additional promotional activities targeted at consumers. Banners for point-of purchase promotion have been made and distributed to all retail outlets for nursery products. Additional marketing efforts have been targeted at industry representatives in the recent trade show exhibits. Promotion and publicity is considered important by the Kentucky Horticulture Council, Inc. The Kentucky Horticulture Council, Inc. included “The ‘Theodore Klein Landscape Plant Award’ program requires statewide public promotion” in the *Horticultural Opportunities: A Prospectus for Kentucky’s Horticultural Industries*, June, 2000. Funding has been secured for a nursery marketing specialist in the Department of Agriculture. The Marketing Specialist, Hope Crain, has been appointed to the TKPA Committee to assist in marketing efforts targeted to consumers.

A means of surveying industry representatives to evaluate the program will be developed. S-290, a cooperative Regional Research Project, *Technical and Economical Efficiencies of Producing, Marketing, and Managing Environmental Plants* sponsored by the Southern Association of Agricultural Experiment Station Directors, will attempt to evaluate the economic impact of plant award programs. Currently the Theodore Klein Plant Award is one of four southern plant award programs being evaluated by S-290.

**Publicity**

Kentucky’s Theodore Klein Plant Award web site
http://www.ca.uky.edu/HLA/Dunwell/TKleinPA.html
Trade Show Exhibits (images of displays available on request)
Southern Nursery Association Trade Show - 2002
Kentucky Nursery And Landscape Association Summer Outing - 2002

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Publications

- *Cornus florida* ‘Appalachian Spring’ – Appalachian Spring Dogwood
  http://www.ca.uky.edu/HLA/Dunwell/CornusfloridaAppalachianSpringTKPA10.html
- *Pinus bungeana* - Lacebark Pine
  http://www.ca.uky.edu/HLA/Dunwell/PinusbungeanaTKPA10.html
- *Chionanthus retusus* - Chinese Fringetree
  http://www.ca.uky.edu/HLA/Dunwell/ChionanthusretususTKPA10.html
- *Dryopteris x australis* – Dixie Wood Fern
  http://www.ca.uky.edu/HLA/Dunwell/DryopterisxaustralisTKPA10.html
- *Euphorbia amygdaloides* var. *robbiae* - Wood Spurge, Robb's Euphorbia
  http://www.ca.uky.edu/HLA/Dunwell/EuphorbiaamygdaloidesvarrobbiaeTKPA10.html

- *Calycanthus* 'Hartlage Wine' – Hartlage Wine Sweetshrub
  http://www.ca.uky.edu/HLA/Dunwell/xSinocalycalycanthusHartlageWineTKPA09.html
- *Magnolia × loebneri* ‘Leonard Messel’ – Leonard Messel Magnolia
  http://www.ca.uky.edu/HLA/Dunwell/MagnoliaLeonardMesselTKPA09.html
- *Platanus x acerifolia* 'Yarwood' – Yarwood Planetree
  http://www.ca.uky.edu/HLA/Dunwell/PlatanusxacerifoliaYarwoodTKPA09.html
- *Nepeta* ‘Walker’s Low’ – Walker’s Low Catnip
  http://www.ca.uky.edu/HLA/Dunwell/NepetaWalkersLowTKPA09.html
- *Panicum virgatum* ‘Cloud Nine’ – Cloud Nine Switchgrass
  http://www.ca.uky.edu/HLA/Dunwell/PanicumvirgatumCloudNineTKPA09.html


- *Fagus sylvatica* 'Laciniata' or 'Asplenifolia' - Cut Leaf European Beech
  http://www.ca.uky.edu/HLA/Dunwell/FagusssylvaticaTKPA08.html
- *Parrotia persica* - Persian Parrotia
  http://www.ca.uky.edu/HLA/Dunwell/ParrotiapersicaTKPA08.html
- *Cercis canadensis* ‘Silver Cloud’ – Red Bud
  http://www.ca.uky.edu/HLA/Dunwell/CerciscanadensisSilverCloudTKPA08.html
- *Asimina triloba* – Paw Paw
  http://www.ca.uky.edu/HLA/Dunwell/AsiminatrilobaTKPA08.html
Geranium x cantabrigiense ‘Karmina’ – Cambridge Geranium  
http://www.ca.uky.edu/HLA/Dunwell/GeraniumKarminaTKPA08.html

http://www.ca.uky.edu/HLA/Dunwell/TKPA07.pdf

- Acanthus spinosus - Bear's Breeches  
http://www.ca.uky.edu/HLA/Dunwell/acanthusspinosa.html  
- Bignonia capreolata - Cross Vine.  
http://www.ca.uky.edu/HLA/Dunwell/Bignoniacapreolata.html  
Magnolia virginiana var. australis - Evergreen Sweetbay Magnolia  
http://www.ca.uky.edu/HLA/Dunwell/magnoliavirgaaustralis.html  
Metasequoia glyptostroboides - Dawn Redwood  
http://www.ca.uky.edu/HLA/Dunwell/MetasequoiaglyptostroboidesTKPA07.html  
Physocarpus opulifolius 'Seward' - Summer Wine™ Eastern Ninebark  
http://www.ca.uky.edu/HLA/Dunwell/PhysocarpusopulifoliusTKPA07.html

Dunwell, Winston C. 2006. Theodore Klein Plant Award site revised Plant Descriptions  
http://www.ca.uky.edu/HLA/Dunwell/TKleinPA.html

http://www.ca.uky.edu/HLA/Dunwell/TKPA06.html

- Cornus kousa ‘Wolf Eyes’ – varigated Chinese dogwood  
http://www.ca.uky.edu/HLA/Dunwell/cornuskwolfeyes.html  
- Nyssa sylvatica – black gum, black tupelo  
http://www.ca.uky.edu/HLA/Dunwell/nyssasylv.html  
- Viburnum x burkwoodii ‘Mohawk’  
http://www.ca.uky.edu/HLA/Dunwell/ViburnumMohawk.html  
- Baptisia australis – false indigo  
http://www.ca.uky.edu/HLA/Dunwell/Baptistaaustralis.html  
- Rohdea japonica – sacred lily  
http://www.ca.uky.edu/HLA/Dunwell/Rohdeajaponica.html

http://www.ca.uky.edu/HLA/Dunwell/TKleinPA.html

http://www.ca.uky.edu/HLA/Dunwell/TKPA05.pdf

- Abies nordmanniana, Nordmann Fir  
http://www.ca.uky.edu/HLA/Dunwell/AbiesNord.html

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- *Cercis Canadensis* ‘Appalachian Red’  
http://www.ca.uky.edu/HLA/Dunwell/Cerciscapplcnred.html

- *Quercus bicolor*, Swamp White Oak  
http://www.ca.uky.edu/HLA/Dunwell/Quercusbicolor.html

- *Hakonechloa macra* ‘Aureola’ - Golden Japanese Forest Grass  
http://www.ca.uky.edu/HLA/Dunwell/HakmacAureola.html

http://www.ca.uky.edu/HLA/Dunwell/TKPAhdout.pdf attached


KNA Nursery Views 29 (1):25

Theodore Klein Plant Award Committee. 1998. KNA Nursery Views Covers.  
KNA Nursery Views 28.

Collected photocopied materials, 29 pages.

Minutes a related information, 52 pages.

KNA Nursery Views 28 (2):21

KNA Nursery Views 28 (3):16.


**Dunwell, Winston C.** 1996. Last call For Nominations for the KNA Annual Plant Awards to be announced at Kentucky Landscape Industries Conference 1997.  


**Point-of-purchase Posters** (2002 reduced size example, posters available on request)

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Point-of-purchase Banner (available on request)

Created by TKPA committee with funds from the value-added grant: Michael, Donna, Winston C. Dunwell, and Debbie Cain. 1999. Value-added programs for the Kentucky Nursery industry. Kentucky Department of Agriculture, $30,000.

Other Publicity (available upon request)

Local garden writers and columnists
Louisville Courier Journal, Diane Ackerman
Louisville Courier Journal, Bob Hill
Paducah Sun, Carolyn Roof

Out-of-state
Blue Ribbon Winners: Showcasing Award Winning Plants at The North Carolina Arboretum http://www.nearboretum.org/Horticulture/BRW.htm
Greenbeam Plant Picks: Plants for Promotion http://www.greenbeam.com/features/plant032700.stm

Funding
Kentucky Nursery and Landscape Association: one-half cost of 1999-2001 poster point-of-purchase promotion, publicity in Nursery Views
Kentucky Value-Added Grant: Banners for point-of-purchase promotion, Established gardens at UKREC, Princeton, KY and Bernheim Arboretum, Clermont, KY
University of Kentucky: Web site maintenance, publication preparation, images for web site and posters, 2002 poster.
Kentucky’s Theodore Klein Plant Award Winners
*Kentucky Native species

1999 Theodore Klein Plant Award Winners
*Aesculus parviflora - Bottlebrush Buckeye
*Amsonia hubrechtii - Arkansas Blue Star
*Clethra alnifolia 'Hummingbird' pp 8984 - Hummingbird Summersweet*
*Dianthus grantianopolitanus - 'Bath's Pink' - Bath's Pink
*Hydrangea quercifolia - Oakleaf Hydrangea
*Ilex opaca 'Judy Evans' - Judy Evans Holly (Theodore Klein introduction)*

2000 Theodore Klein Plant Award Winners
*Eupatorium maculatum 'Gateway' - Gateway Joe Pye Weed*
*Fothergilla major 'Mount Airy' - Mount Airy Fothergilla*
*Heuchera americana 'Pewter Veil' pp 8984- Pewter Veil Coral Bells
*Itea virginica 'Henry's Garnet' - Virginia Sweetspire*
*Syringa reticulata 'Ivory Silk' - Japanese Tree Lilac
*Viburnum nudum 'Winterthur' - Winterthur Viburnum*

2001 Theodore Klein Plant Award Winners
*Amelanchier x 'Cumulus' pp 3092 - Cumulus Serviceberry*
*Epimedium x versicolor 'Sulphureum' - Sulphureum Epimedium (Barrenwort)
*Malus 'Donald Wyman' - Donald Wyman Crabapple
*Viburnum 'Eskimo' - Eskimo Viburnum*

2002 Theodore Klein Plant Award Winners
*Acer triflorum - Three-flower Maple
*Hamamelis x intermedia - Witchhazel intermediate hybrids of H. japonica x H. mollis
*Ilex verticillata 'Red Sprite' - Red Sprite Winterberry*
*Polygonatum odoratum 'Variegatum' - Variegated Fragrant Solomon's Seal*

2003 Theodore Klein Plant Award Winners
*Cercidiphyllum japonica 'Amazing Grace' - Amazing Grace Weeping Katsura
*Ginkgo biloba ‘Autumn Gold’
*Corinus mas ‘Golden Glory’
*Aster oblongifolius ‘Raydon’s Favorite’*

2004 Theodore Klein Plant Award Winners
*Cladrastis kentukea - Yellowwood
*Helleborus x hybridus (H. orientalis) - Lenten Rose
*Picea orientalis - Oriental Spruce
*Taxodium distichum 'Mickelson' Shawnee Brave™ - Shawnee Brave Bald Cypress
2005 Theodore Klein Plant Award Winners
Abies nordmanniana, Nordmann Fir
*Cercis canadensis 'Appalachian Red', Appalachian Red Redbud
*Quercus bicolor, Swamp White Oak
Hakonechloa macra 'Aureola', Golden Japanese Forest Grass

2006 Theodore Klein Plant Award Winners
Cornus kousa 'Wolf Eyes' - Wolf Eyes Dogwood
*Nyssa sylvatica - Blackgum
Viburnum 'Mohawk' - 'Mohawk' viburnum
*Baptista australis - blue false indigo
Rohdea japonica - sacred lily

2007 Theodore Klein Plant Award Winners
Acanthus spinosa – spiny bears breeches
*Bignonia capreolata - Crossvine cultivars: 'Atrosanguinea', 'Tangerine Beauty', 'Jekyll'
Magnolia virginiana var. australis – Sweetbay Magnolia cultivars: 'Henry Hicks', 'Northern Bell', 'Aiken County', 'Green Bay' syn. 'Green Shadow'
Metasequoia glyptostroboides – Dawn Redwood
Physocarpus opulifolius 'Seward', Summer Wine™

2008 Theodore Klein Plant Award Winners
Fagus sylvatica 'Asplenifolia'or 'Lanciniata' – Fernleaf or Cut Leaf European Beech
Parrotia persica – Persian Parrotia
*Cercis canadensis ‘Silver Cloud’ – Silver Cloud Red Bud
*Asimina triloba – Paw Paw
Geranium x cantabrigiense ‘Karmina’ – Karmina Geranium

2009 Theodore Klein Plant Award Winners
Calycanthus 'Hartlage Wine' – Hartlage Wine Sweetshrub
Magnolia × loebneri ‘Leonard Messel’ – Leonard Messel Magnolia
Platanus × acerifolia 'Yarwood' – Yarwood Planetree
Nepeta ‘Walker’s Low’ – Walker’s Low Catnip
Panicum virgatum ‘Cloud Nine’– Cloud Nine Switchgrass

2010 Theodore Klein Plant Award Winners
*Cornus florida 'Appalachian Spring' – Appalachian Spring Dogwood
Pinus bungeana - Lacebark Pine
Chionanthus retusus - Chinese Fringetree
*Dryopteris × australis – Dixie Wood Fern
Euphorbia amygdaloides var. robbiae - Wood Spurge, Robb's Euphorbia

2011 Theodore Klein Plant Award Winners
Acer griseum × maximowiczianum (A. nikoense) ‘Girard’s’ – Girard’s Maple
Aucuba japonica 'Longifolia'

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*Fargesia rufa Green Panda™ - Green Panda Bamboo*

*Gelsemium sempervirens 'Margarita' - Margarita Carolina Jasmine*

*Lespedeza thunbergii 'Gibraltar' - Gibraltar Bush Clover*

*Spigelia marilandica – Indian Pink*

*Resources:*


Kentucky’s Theodore Klein Plant Award Committee Members

**Founding members of the Theodore Klein Plant Award Selection Committee**
Winston Dunwell, UKCA Dept of Horticulture
Richard Fiest, Hummingbird Nursery
Steve Foltz, Cincinnati Zoo
Mike Hayman, Louisville Courier Journal, Seneca Gardens
Buddy Hubbuch, retired Bernheim Arboretum Chief Horticulturist
Kathy Lowrey, TKPA Chairman, Lowrey Perennial Farm
Melvin Moffitt, Snow Hill Nursery
Tony Nold, Horticulture Design and Development
Dennis Raymond, Raymond Landscape Nursery
Casey Schott, KNLA President when the TKPA was founded, Leichhardt Landscape Company

**Current members of the Theodore Klein Plant Award Selection Committee**
Paul Cappiello, Yew Dell Gardens
Ben Cecil, SunnyRay Nursery
Kevin Collard, Pine View Nursery
Winston Dunwell, UKCA Department of Horticulture – Nursery Crops
Steve Foltz, Cincinnati Zoo
Mike Hayman, Louisville Courier Journal, Seneca Gardens
Tony Nold, Horticulture Design and Development, Plant Kingdom
Rebecca Schnelle, UK Department of Horticulture - Floriculture
Mary Vanaanen, Jellito Seeds
Appendix G: Mass media, seminars, and community activities

Mass Media
Mass media, television (99 Programs), radio (109 programs), and numerous news releases, is one of many tools used to disseminate information on the nursery/landscape industry.

Television: Programs for: UK Agricultural Communications, WHAS11 - Louisville, WPSD6 - Paducah, WLEX18 & 27 - Lexington, WKAG TV43 - Hopkinsville, WBKO13 - Bowling Green

Radio: Programs for: - UK Agricultural Communications, WHOP - Hopkinsville (regional west Kentucky Station, 38 one hour talk shows) station, and local city/county radio stations.


Examples of Television, Radio, Video, and Press release topics:
Dividing Perennials
Fall planting of Woody Ornamental
Fall Landscape Maintenance
Fall Vegetable Cropping
Landscape and Turf Fertilization
Selecting a Holly Tree for Your Home Landscape
Selecting Trees for the low, wet areas of Your Landscape
Winter Yard Care
Pruning Landscape Ornamentals
The Value of Advanced Planning for Vegetable Producers
Controlling Weeds in the Home Garden
Transplanting Native Dogwoods
States Ban Imports: Nurseries Need to Soil Test for Nematodes
Water and Fertilizer Use, Topic of Horticulture Short Course
Dogwood Anthracnose
Soybean Cyst Nematode in Nurseries
Nursery Industry Expansion in West Kentucky.
Kentucky’s Theodore Klein Plant Award (s).

Seminars
China Horticulture, UKREC, August 23, 1999
How I take Pictures, UKREC, November 23, 1998
Winston C. Dunwell’s Mid-sabbatical Travelogue, UK Department of Horticulture, November 9, 1998

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Seminars continued
Beatrice Farrand, the Landscape Architect: A Visual Tour of Her Gardens. Spring, 1998
A Horticultural Sabbatical Travelogue: 10 chronological presentations. UKREC. January 1998-June 1998 every other Friday:
Gardens of New England, June 10, 1996
Gardens of the Washington, D. C. Area, September 25, 1995
The Gardens of France, March 20, 1995
Flowers and Ornamentals of Holland, UKREC, December 12, 1994

Community Activities
Paducah: Four Rivers Botanic Garden and surrounding park development
Grand Rivers: Parks, wetland boardwalk, and Cemetery Landscaping
Home and Business Landscape Judge, Evansville, IN Operation City Beautiful
Dr. Amos Home Site Historic Tree (American Elm) and it's Care
Big Springs Park Landscape, Princeton, KY
Smithland River Front Beautification and Development
Muhlenburg County High School Landscape
Livingston County Extension Office Landscape
Crittenden County Park Tree Care Program
Paducah Downtown Beautification Program
City of Owensboro: Plant Production for City Beautification
Other Extension Programs: Consumer Horticulture and Vegetable Production


Consumer Horticulture: Master Gardener Educator/Volunteer Director.
Master Gardener programs and other activities directed at the gardening public have had a significant impact on my Extension program. They have helped promote Extension programs, such as Kentucky’s Theodore Klein Plant Award program that is heavily promoted during the Purchase Area Master Gardener’s annual Garden Gurus Conference that attracts 500 active gardeners to hear programs about plants from internationally recognized speakers, and to bid on Kentucky’s Theodore Klein Plant Award Winners during the plant auction. I serve as Master of Ceremonies for the Garden Gurus Conference. Impact: Master Gardener’s active interest in plants has made me aware that it is imperative that the nursery/landscape industry and nursery specialists not overlook the importance of marketing plants to the knowledgeable gardener. I have adjusted my Extension programming accordingly; see Nursery Crop Development Center above. Experience with the Master Gardener Program has shown there is a high return for the time allocated in support of this educational-volunteerism program. The result of Master Gardener training has been a dramatic increase in interest in gardening (500 people attend the annual Garden Programs in Paducah, KY) leading to an increase in both the number of nursery/landscape enterprises and the financial return to those businesses. In the Purchase Area four nursery/landscape enterprises are owned and operated by Master Gardener graduates. A rapidly growing container nursery and a garden center have been started by Master Gardeners after completing the classes. Past Presidents of the West Kentucky Chapter of the Kentucky Nursery and Landscape Association and officers of the Kentucky Nursery and Landscape Association have been Master Gardener graduates and have serve in officer positions in the Purchase Area Master Gardeners. The Master Gardener volunteers have served at the UKREC by helping with education (BMP registration) programs, program evaluation, UKREC Botanic Garden maintenance, harvest and data collection.

Vegetable Crop Production
UKREC Vegetable Extension Position: There was no Extension Specialist for Vegetable Crop Production in west Kentucky prior to 2002. College of Agriculture Dean, Dr. Charles Barnhart, and Department of Horticulture Chair, Dr. A. S. Williams asked that I provide support for vegetable production as needed. In the 1980's there were no Extension Agents for Horticulture in west Kentucky counties where vegetable production was developing as an alternate crop. I provided vegetable crop production expertise until a county Horticulture agent in each of the three areas of west Kentucky reduced the need for me to work in this area in the early 1990s.

The Vegetable Situation: the vegetable industry was struggling in the 1980's. A tomato cooperative in the Purchase area had failed in the 1970's. This left a significant market void. The survivors learned to market their own tomatoes directly to retail markets in other states by taking advantage of the well-known “Kentucky Tomato”, a red ripe tomato, that had been sold to roadside marketers in resort areas surrounding the Great Lakes by several generations of west

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Kentucky farmers. The major cities of sales are Detroit, Chicago, and Milwaukee. I assisted growers trying to develop alternative horticultural crop production to reduce dependency on a single crop. Approximately 60% of the vegetable growers started growing ornamental crops, initially bedding plants that complemented their vegetable transplant production expertise, later, other crops such as field grown and container produced woody plants and herbaceous perennials. 90% of the growers I originally worked with still grow vegetables to maintain their diversity even though the profit margin is greater for ornamentals.

Vegetable Extension Programs

**Diagnostic consultation** is important grower support to maintain a quality product and a competitive advantage in those markets. One-on-one consultation was the primary Extension activity. Initially simple problems were corrected, i.e., lack of proper rotation with tomato and tobacco crops leading to bacterial canker of tomatoes. With the increasing sophistication of the growers the problems and diagnosis became much more difficult and frequently required a team approach to solve. A plant pathologist and soil scientist assisted in diagnosing micro-element deficiencies that needed correction when the technological advances of using plastic mulches and fertilizer injected through the irrigation systems were implemented and resulted in roots staying in the water and macro-elements provided by the favorable environment under the plastic and not extending to the micro-element rich areas 60-90 centimeters (approximately 24-36 inches) below the soil surface.

**Vegetable Integrated Pest Management:** In cooperation with county Extension agents, Extension specialists, and the UK IPM Coordinator an IPM program for processing tomatoes was developed for the Green River Area. I coordinated providing pest management information to the Daviess county Extension agent. A newsletter was sent out to growers. The result was timely and effective application of pesticides resulting in a savings of an estimated $35,700 and less pesticide, estimated at 3,060 pounds, entering the environment. Success of the processing tomato IPM program lead to a Vegetable Integrated Pest Management (IPM) program coordinated with the Daviess County Extension Horticulture Agent. This project continues to show the benefits of IPM programs through reduced insect and disease damage to vegetable fresh market and processing crops.

**Support New Vegetable Enterprises:** The Green River Area studied development of Processing Tomato Industry. I worked with University of Kentucky Extension Specialists to plant, care, and sample processing tomato variety plots. This project ultimately lead to the currently successful Owensboro vegetable cooperative, West Kentucky Growers Cooperative, that uses the originally developed J. C. Ellis vegetable packing facilities to package 1,000 acres of fresh sweet corn and 150 acres of mixed vegetables (2001 figures). Pennyrile Agricultural Marketing Cooperative, Inc was established in 1986. It was headquartered in Hopkinsville and provided Peppers to Cherokee Products, Inc., a pimento pepper processing company. I served as a production advisor to the Pennyrile Area County Extension Agents for Agriculture with growers in their counties and with the Extension agents provided educational programs for the growers. The growers of this group now sell through the successful Fairview Produce Auction that started in 1997. I was a frequent speaker at county and state meetings on
vegetables as alternate crops (See appendix B & C).

**Protecting the Vegetable Industry.** In 1990 introduction of *Phoma lingam* (blackleg) of *Brassica sp.* (broccoli, cauliflower, cabbage, and brussel sprouts) to Kentucky on *Brassica napus, B. campestris/rapa*, (Canola, rape) seed became a concern of the vegetable industry. I reported to the Kentucky Seed Improvement Association on the problems and potential losses to the vegetable industry. The presentation resulted in the Kentucky Seed Improvement Association establishing a policy that all incoming Canola Seed be treated for blackleg.

**Retail horticultural crop marketing** has been a method growers have used to increase returns. I compiled a list of markets (roadside stands, farmer’s markets, connoisseur produce shops, and cooperatives that sell produce and organic products) and a collection of images to share with growers. Several used the list to visit markets, in and out of state, before undertaking development of their own retail outlet.

**Impact:** Individual vegetable and tobacco farmers (Wurth Brothers, Wyatt Farms, Bennett Farms, as examples) have all diversified to ornamentals and new marketing methods including garden centers, roadside stands and entertainment farming (fall pumpkins, mums, corn mazes, school children tours, farm animal petting zoos, etc) to become financially secure. The vegetable cooperative in Owensboro is now operational after several false starts and the Fairview Auction supports a large number of small produce and ornamental plant growers.
**Professional development** in the form of university, nursery/landscape industry sites, arboreta and botanic gardens visitation, consultations and tours, plus attendance and presentations at professional meetings to gain knowledge and develop a consultation network in support of the Nursery Crop Development Center and New Crop Opportunities programs has proven valuable to development of Extension Programming.

**Presentations International and National**

**Winston C. Dunwell.** Pot-in-pot Production Short course Presenter, China Division of Forestry, Jai’an, China, 2006.

**Winston C. Dunwell.** 2006. Invited Feature Speaker at The 4th China Taishan International Trade Fair of Flowers and Nursery Stock and The Taishan International Seminar of Flowers and Nursery Stock, Tai’an, China, 2006


**Dunwell, Winston C.** May 1999. Monitoring and Maintaining Food Quality and Safety. Northeastern China University and The Research Institute, Harbin, China


Dunwell, Winston C. November 1990. Coordinator - Deans of Agriculture from Indonesia Tour of UKREC.


A successful sabbatical (1997) resulted in a significant increase in the resources I have to share with nursery/landscape clientele. During six months of sabbatical time and two weeks of leave I traveled (27,462 miles) the east coast visiting nurseries, garden centers, vegetable markets, botanical gardens and special private gardens and collected:

a. 4000 photographic Images
b. 12 notebooks of horticultural information
c. an electronic database (two printed books, 105 pages) of east coast gardens, nurseries, garden centers, greenhouses, vegetable production, farm markets, and alternative market

National and International Travel has made it possible for me to have images and information on the latest advances in the nursery industry. Travel to third-world countries has given me insight into the effect of third-world country development on USA horticultural enterprises.

2010, California, San Diego to San Francisco, Nurseries, Gardens, National Parks
2009, Oregon & Washington Nursery Tours
2009, Costa Rica Tour: nursery, greenhouse, landscapes, environmental sites.
2006, Tai’an, Jai’an, Shanghai, Suzhou, China,
2006. Northwest US Horticulture Tour
2006, KNLA/KDA/UK Ohio Nursery Tour
2002, Europe tour of nursery/greenhouse industry and ornamental plant study sites

Winston C. Dunwell xlvi
2002, Washington and Oregon nursery production areas
2001, New Zealand, Fiji
2000, Europe, continent and England
1999, Ecuador; Invited consultant and lecturer for Nursery propagation and cut-flower production.
1999, Invited lecturer China, Beijing, Harbin, Shandong, Xian, Kunming, Quilin, Suzhou, Shanghia.
1999, Oahu Island, Hawaii, Tour Gardens, Orchid Nurseries and University of Hawaii
1998, East Coast of U.S.A. Nursery/Gardens
1997, Sabbatical (6 months); Nursery/Landscape industry visits from South Florida to Grand Metis, Quebec, Canada
1996, Oregon Nursery Tour
1995, May: East Coast of U.S.A. Nursery/Gardens Tour
1994, May: European Continent Nursery/Gardens Tour
1993, March: Oregon Nursery Tour