

## Cover Page

PROJECT TITLE: Increasing Adoption of Reduced Risk Practices in the  
Production of Woody Ornamentals

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PROJECT DURATION: 2 Year

TOTAL BUDGET REQUEST	REQUEST	MATCHING FUNDS (Not Required)	
		Non-Federal	Federal
First Year Funding	39,870	0	0
Second Year Funding	0	0	0
<b>Total Funding Request</b>	<b>39,870</b>		

## **Executive Summary**

Practice-based Integrated Pest Management (IPM) certification programs, actually implemented versus potentially accomplished through training, have been shown to increase adoption of IPM and other Best Management Practices (BMPs) that reduce risk to human health and the environment, and to reduce reliance on highest risk pest control options. To date, more than 16 such programs are available to producers of more than 40 crops, and golf courses and structural pest management professionals throughout the U.S. Successes include a collaboration between the World Wildlife Fund and the Wisconsin potato industry, that reduced reliance on 11 highest risk pesticides by more than 37% over three years.

Despite the growing knowledgebase available to create and operate credible practice-based IPM certification, producers of ornamental plants have not had access to such a program. This project will create a state-of-the-art certification system for Florida woody ornamentals, an industry with an estimated \$236 million in annual sales. The effort will apply knowledge gleaned from more than 20 years of published research and practical experience in operating and marketing IPM produced goods.

The project will create a multi-stakeholder working group to provide ongoing oversight and direction, draft general guidelines to govern operation of the industry-driven program, and create quantitative evaluation criteria specific to woody ornamentals in Florida to measure compliance with the general guidelines. The evaluation system will include a minimum quantitative score to achieve certification, specific incentives for selection of reduced-risk pest management options, and trained independent inspectors to evaluate applicants through on-site inspections. The project will also create educational materials in print and on-line to inform wholesale and retail consumers about IPM and the accomplishments of certified producers. It will identify and recruit a volunteer certification committee to review applications and inspection reports and grant approval for certification. Actual inspections will be conducted by trained, independent third-party inspectors who will report results to the IPM Institute of North America.

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# **Proposal Narrative**

## **Part I. Project Title**

### **Increasing Adoption of Reduced Risk Practices in the Production of Woody Ornamentals**

## **Part II. Objectives**

The goal of this project is to significantly increase the number of woody ornamental producers using reduced risk practices and products. This will be accomplished by creating a credible IPM certification program that gives recognition in the marketplace for woody ornamentals produced using IPM practices.

## **Part III. Justification**

Florida is an ideal state for pilot testing IPM certification and labeling of ornamental plants because the products are extremely valuable and the environment is vulnerable to contamination. The wholesale ornamental plant nursery industry, estimated at \$1.46 billion in annual plant sales at the farmgate in 1997, is the second largest agricultural sector in Florida (Hodges and Haydu 1999). Woody ornamental production is estimated at 16% of this total, or \$236 million (Larson Vasquez and Nesheim 2000). From an environmental standpoint, Florida has a warm, humid climate that supports a wide variety of insect, disease, nematode and weed pests. Moreover, the state's cosmopolitan population and international ports provide opportunities for the introduction of very damaging exotic organisms. High water tables and the risk of contaminating the aquifer make water quality issues extremely important. Several regional centers of ornamental plant production border environmentally sensitive areas, such as the Everglades National Park.

The high aesthetic value of ornamental crops and intensive nature of production systems have created an industry that is heavily dependent on pesticides. Producers of woody ornamentals reported using an average of 5.5 different insecticides, 3.9 fungicides and 2.4 herbicides with a wide range of risk factors each season. Frequent prophylactic "fumigation" is a common practice within the industry. However, IPM practices are available, including scouting, proper pest identification, economic thresholds, and least risk options, i.e., cultural and biological controls (Larson Vasquez and Nesheim 2000). There is a need to reduce this reliance on pesticides and integrate their use with other pest management options (Hudson et al. 1996).

Currently, there is no IPM certification and labeling program available to the producers of nursery crops, despite growing knowledge of how to effectively use certification to increase and document adoption of IPM (see Green 2002a). Practice-based certification programs in other agricultural sectors have demonstrated increases over time in the numbers of participating growers, acres and crops, and in IPM practices implemented by participants (Hollingsworth and Coli 1999, Petzoldt 1999). Documented results include a 37% reduction in the use of 11 high risk pesticides over three years in Wisconsin potatoes (Lynch et al. 2000). Certification programs using IPM implementation as a requirement are now available for more than 40 crops in North America as well as forest products, golf courses and structural pest management (see Green 2002b).

Practice-based certification programs are distinct from individual professional training and exam-based certification (e.g., Florida Certified Horticultural Professional operated by the Florida Nurserymen and Growers' Association (FNGA)) in that companies are audited for implementation of practices. Grower members of the FNGA currently total 783. Certified product can be labeled and marketed as being produced according to published standards.

Changes in adoption of IPM and other Best Management Practices (BMPs), including use of reduced risk control options, are documented through the annual on-site inspection and evaluation process.

#### **Part IV. Literature Review**

IPM labeling has gained acceptance among a wide range of commodity groups and food processors (Cross and Dickler 1994, Anonymous 1999a, Anonymous 2001, Green 2002a,). To assure that the IPM certification and labeling are unbiased, non-governmental organizations are sponsoring and often managing the certification systems (Kane et al. 2001). These organizations include the World Wildlife Fund, Audubon International, Food Alliance, and the IPM Institute of North America, among others (Green 2002a). They help to initiate IPM certification and labeling programs, build coalitions among the participants, recruit and train certification personnel, and monitor compliance. IPM certification programs have been promoting environmental stewardship, reducing production and processing costs, improving profits through IPM labeling, and protecting growers and processors from accusations of pesticide misuse. This protection has been particularly important for producers of fresh market produce. A notable example is "Protected Harvest," a 503c foundation formed to promote and certify crops that have been grown, harvested, packed and stored using stringent environmentally friendly methods ([www.Protectedharvest.com](http://www.Protectedharvest.com)). Activities include IPM measuring of the preventive practices, toxicity indices of applied pesticides and a third party audit to certify that the grower performed the required activities. The first certified crop was fresh market potatoes grown in Wisconsin under the "Healthy Grown" brand. This summer is the second year for this crop and an increased number of growers have signed up for the program. The Wisconsin Potato and Vegetable Grower's Association manages this program with valuable guidance and input from the

University of Wisconsin (Lynch et al. 2000). Protected Harvest is in the process of evaluating their next batch of crops for certification.

IPM certification and labeling has not been developed for the ornamentals industry and Florida is an ideal place to begin the program (Johnson 1997). Pest management in ornamental plant production is particularly challenging in Florida because of the mild climate, urbanization, water quality issues, and environmentally sensitive areas. Moreover, Florida tends to be a key site for new exotic pest and disease introductions. In a survey of ornamental plant nurseries in Florida conducted in 1995, it was shown that the use of pesticides on a predetermined schedule is still a common practice (Hodges et al. 1998). Many of the firms surveyed incorporated some IPM practices but the range of use varied greatly (3% to 83%). There is a need for IPM certification that is direct, emphasizes hands-on training, and is structured specifically for woody ornamental plant producers (Coli and Hollingsworth 1996).

The UF, IFAS and IPM Institute of North America are committed to helping the ornamentals industry to implement IPM certification and labeling. The UF, IFAS provides economic analyses for the industry (Hodges and Haydu 1999, Hodges 2000, Degner et al. 2000), supports pest and disease management (Osborne et al. 1999, Buss and Short 2001), and contributes evaluations of industry practices (Larson-Vasquez and Nesheim 2000). Moreover, several faculty members are assigned full-time responsibility for research and extension on pest and disease management for ornamental crops ([entnemdept.ifas.ufl.edu](http://entnemdept.ifas.ufl.edu), [plantpath.ifas.ufl.edu](http://plantpath.ifas.ufl.edu), [hort.ifas.ufl.edu](http://hort.ifas.ufl.edu)). The IPM Institute is probably the most experienced organization in designing and conducting IPM certification and labeling in the world (Green 2002a). Thus, the coalition formed by UF, IFAS, IPM Institute and Florida producers of woody ornamentals is eminently capable of successfully building the first IPM certification program for this industry.

## **Part V. Approach and Methods**

The goal of this project is to create a measurable increase in the number of producers of woody ornamentals using reduced risk practices and products, and recognition in the marketplace for those producers through a credible certification program. We envision this project as the first step in a coordinated national certification program for non-food agricultural products including nursery and ornamental crops. The overall program will address additional criteria of public concern, including wildlife and habitat preservation, farm worker safety, and BMPs for nutrient and water resource management. Coordinating a national, multi-use program has potential to maximize wholesale and retail consumer support, improve efficiency, and reduce administrative costs (Anonymous 1999a, b; Kane et al. 2001).

Specific activities that will be carried out under this proposal include:

- Create a multi-stakeholder working group to provide ongoing oversight and direction.
- Draft general guidelines or standards to govern operation of the program and development of crop and region-specific evaluation criteria.
- Draft quantitative evaluation criteria specific to woody ornamentals in Florida to measure compliance with the general guidelines. Include a minimum score to achieve certification with producer flexibility in choice of practices to meet the minimum score. Include specific incentives for use of reduced-risk options.
- Train independent inspectors to evaluate applicants in meeting the criteria.
- Create educational materials in print and on-line to inform wholesale and retail consumers about IPM and the accomplishments of certified producers.

This project will identify and recruit a volunteer certification committee to review applications and inspection reports and grant approval for certification. Actual inspections will be conducted by trained, independent inspectors who will report results to the IPM Institute of North America. The UF, IFAS will coordinate the project and provide educational support, an appropriate role for a Land Grant University (VanKirk and Garling 1997). Cherry Lake Tree Farm will represent the producers of woody ornamentals by describing current practices and testing advancements. The generic IPM certification structure and process has been developed by the IPM Institute of North America and applied to specific agricultural commodities. In this case, they will apply what they have learned to customize IPM certification for a segment of ornamental plant production. This pilot project is a pioneering effort, the first for this industry.

The final product will be available on-line for public inspection and non-participant use as an educational and self-evaluation tool. When completed, the program will be promoted as a model to the broader ornamentals industry in Florida (ranked second in the U.S. with \$1.46 billion in annual sales) and nationally (\$10.9 billion).

To ensure a meaningful, credible program, we will use the following guidelines developed by Consumers Union (Anonymous 2001) and others (Dlott and Curtis 2000):

- Standards are meaningful, i.e., implementation reduces negative environmental and health impacts.
- Standards can be verified by independent inspectors.
- Requirements are consistent across products bearing the same label.
- Verification of compliance is consistent across products.
- Organizational structure, funding and information is available to public.

- Certification standards are available to the public.
- Standards setting organization may receive funding through certification fees but should not receive funding from product sales.
- Certifying organization should not receive funding from product sales.
- No affiliations between certifier and certified.
- Develop an explicit conflict of interest policy.
- Standards developed with multi-stakeholder input and public comment period.
- Input should avoid conflict of interest.
- Stated principles are addressed in criteria and standards.
- At least one metric is used to measure compliance for each principle.
- Certification process confirms that all stated claims are addressed.

Experience has shown that such efforts can be self-sustaining and, once established, may also generate modest funding for research and demonstration of reduced-risk techniques (M. Mesh, Executive Director, Florida Organic Growers, pers. comm., 2001). Evaluation criteria created for this project will be similar to tools created for education and self-assessment (Anonymous 1998b, Coli and Hollingsworth 1996, Guillebeau and Van De Mark 1999, Omhart and Matthiasson 2000) and will be equally valuable for that purpose.

### **Organizational Competencies**

The UF, IFAS will coordinate the project and provide educational support, an appropriate role for a Land Grant university (VanKirk and Garling 1997). The UF, IFAS has a strong IPM program (<http://biocontrol.ifas.ufl.edu>, Citrus & Vegetable Magazine, Nov. 2001) and significant

research and extension resources and personnel dedicated to IPM and biological control in ornamental horticulture. Up-to-date IPM educational materials and recommendations are published continuously (<http://edis.ifas.ufl.edu>, Short et. al. 2001, Osborne et. al. 2001) and used to enhance the production of woody ornamentals. UF, IFAS provides student training in IPM and is the first university in the world to offer the Doctorate in Plant Medicine (D.P.M.), a new professional cross-discipline doctorate in arthropod, disease, and soil management (<http://www.dpm.ifas.ufl.edu>). UF, IFAS Extension has statewide networks providing extensive support to the woody ornamentals industry (<http://www.ifas.ufl.edu/www/extension/ces.htm>).

Cherry Lake Tree Farm, Inc., a major Florida container woody ornamental producer, has grown to 850 acres from its founding on ten acres in 1979. The company is an industry leader and perennial award winner, including the Ornamental Outlook “Operation of the Year” in 2000, ISA-Florida “Grower of the Year” in 1999, FNGA Grower of the Year, Governor’s Business Leadership Award, Mid-Florida Industry of the Year and others. Cherry Lake Tree Farm's sister company IMG Enterprises, is the first U.S. citrus producer to be certified by the Food Alliance, a non-profit eco-label based in Portland, OR. IMG is also certified under several major international labels sponsored by private chain stores to ensure food safety and "responsible agriculture" (Tesco's Nature's Choice Gold Level Certification, Carrefour's Quality Line label, and Casino's Terre et Saveur label). Cherry Lake Tree Farm is representing the producers of woody ornamentals by describing current practices and testing advancements.

IPM Institute of North America, Inc. is a non-profit, tax-exempt 501(c)(3) organization and the leading service and information provider for IPM certification in the U.S. The Institute has provided certification program development, program guidelines, standards and evaluation criteria for clients including CORE Values Northeast, the Food Alliance, Whole Foods Market,

USDA-CSREES and others since 1998. The Institute initiated the first IPM eco-label inspector training and certification program in 2001. The Institute's track record includes a complete certification system developed for Whole Foods Market over a period of six months in 2001 and a development budget of less than \$60,000. The Institute will apply what they have learned to customize IPM certification for a segment of ornamental plant production.

### **Workplan/Timetable**

Please refer to Appendix B for a complete workplan/timetable that documents in further detail the approach and methods to be used.

### **Part VI. Impact Assessment**

The project is expected to reduce risk by increasing adoption of reduced risk practices and products in the Florida woody ornamentals industry. The project has potential to impact two of the four objectives of 2002 PESP, including outreach, communications, technology transfer and information networks to promote use of reduced risk pest control methods; and promoting use of bio-pesticides and reduced risk pesticides.

Data will be collected on the percentage of growers educated, the percentage of growers likely to change practices and the percentage of acreage on which recommended practices are implemented. A grower survey will be conducted to determine actual behavioral changes. The number of times that educational materials are accessed will be recorded. The numbers of growers, industry representatives and university personnel attending information and training workshops will be counted and asked to complete questionnaires. Particular emphasis will be placed on the number of growers participating in the IPM certification process and the scores they achieve when assessed for use of reduced risk practices during certification.

## **Criteria to Measure Risk Reduction**

1. Number of participating producers, acres, crops.
2. Average point score earned on evaluation criteria by participants vs. non-participants (post-project period).
3. Reduction in use of specific high risk pesticides.
4. Increase in use of specific reduced risk pesticides.

## Proposal Appendices

### A. Literature Cited

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## **B. Timetable**

The project will create a fully functional certification system for Florida woody ornamentals by the end of the second project year including an annual evaluation/reporting system. The system will be readily adaptable to other ornamentals crops in Florida and other regions of the U.S.

### ***July to December 2002***

- Identify and recruit participants for the working group including PI, Co-PIs and other representatives from the UF, IFAS (Research - Entomology, Environmental Horticulture, Plant Pathology - and Extension - specialist and county agent levels), industry and consumer/environmental groups. This working group will be responsible for input, review and comment on program documents and procedures throughout development. Representation and input will be solicited from end users of certified product including commercial and residential developers, golf courses, homeowners associations, theme parks, universities, cities and municipalities, as well as neighbors of large woody ornamental operations.
- Prepare initial briefing document reviewing existing programs and collaborating with the working group, including methodologies for ranking crop production chemicals by environmental and human health risks (Anonymous 1998a, 2000, Cross and Dickler 1994, Lynch et al. 2000).
- Hold initial work group meeting in central Florida. Agenda: introductions; review of existing programs and methods; review conceptual outline and IPM/BMP practice inventory; begin to rank practices for environmental benefits.
- Complete first draft conceptual outline of program operations and procedures, general guidelines and inventory of IPM and other best management practices for nursery crops in Florida.
- Prepare, circulate draft program materials including evaluation criteria based on meeting discussion. Weight practices with point values based on ranking completed at meeting to encourage implementation of most beneficial practices.

### ***January to April 2003***

- Solicit extensive review by Extension and the producers of woody ornamentals to assure that the IPM certification process has industry wide support.
- Receive comments on circulated materials, redraft and recirculate. Review by working group conference call, finalize general guidelines and practice-based evaluation criteria.
- Prepare initial list of pesticides and other crop production chemicals used in nursery crops in Florida and environmental and human health risk factors associated with each. Circulate for review and comment.

- Draft educational materials for wholesale and retail buyers including a recognizable logo, product labels, brochure and web pages. Circulate for review and comment.

### ***May to August 2003***

- Hold second working group meeting. Agenda: review draft crop production chemical assessment; begin to rank by impacts, decide on an incentive system to encourage use of reduced risk options.
- Draft incentive system for crop production chemicals based on meeting discussion. Circulate for review and comment.
- Prepare second draft educational and training materials. Circulate for review and comment.
- Identify and recruit a volunteer certification committee to review applications and inspection reports and grant approval for certification.

### ***September 2003 to January 2004***

- Finalize all program materials and procedures. Publish on-line for open review and comment, including the evaluation criteria for non-participant use as an educational and self-assessment tool.
- Create self-sufficient budget and fee schedule for first three years of operation. Circulate for review and comment.
- Identify and recruit inspectors with appropriate agricultural backgrounds.
- Hold inspector training sessions with verification of competence.

### ***February to June 2004***

- Continue to recruit producers to be involved in further development of the certification program for woody ornamentals.
- Draft comparative survey (non-participants vs. participants, i.e., Hollingsworth and Coli 1999) and timeline for funding and implementation.
- Hold first annual meeting of certified producers, buyers and interested others to network, share information, results, etc.
- Hold first annual meeting of working group and certification committee to review and update program procedures and documents.
- Plan for improvements and potential expansion of the IPM certification for the production of ornamental horticulture products.

## **C. Major Participants**

Project Coordinator:

Norman C. Leppla, Ph.D.  
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University of Florida Institute of Food and Agricultural Sciences

Daniel J. Sonke  
Assistant IPM Coordinator, Doctor of Plant Medicine Student  
University of Florida Institute of Food and Agricultural Sciences

Collaborators:

Thomas A. Green, Ph.D.  
President  
IPM Institute of North America, Inc.

Timothée Sallin  
Marketing Representative  
Cherry Lake Tree Farm

Eileen A. Buss, Ph.D.  
Assistant Professor and Extension Specialist  
University of Florida Institute of Food and Agricultural Sciences

Frank Melton, M.S.  
Extension Agent-Ornamental Production  
University of Florida / Manatee County Cooperative Extension Service

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### **EDUCATION**

B.S.	Zoology	Arizona State University	1968
M.S.	Zoology	Arizona State University	1970
Ph.D.	Entomology/ Biological Sciences	University of Arizona	1972

### **PROFESSIONAL EXPERIENCE**

- 2001 - pres. Professor and IPM Coordinator, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida.
- 1999 - 2001 Professor, Department of Entomology and Nematology, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida.
- 1997 - 1998 Professor and Center Director, Central Florida Research and Education Center, Institute of Food and Agricultural Sciences, Univ. of Florida, Apopka, Florida.
- 1995 - 1996 Associate Director, National Biological Control Institute, Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture (USDA), Hyattsville, Maryland (GM-15).
- 1992 - 1994 Chief, Methods Development, Plant Protection and Quarantine, APHIS, USDA, Hyattsville, Maryland (GM-15).
- 1989 - 1992 Director, Methods Development, Science and Technology, APHIS, USDA, Hyattsville, Maryland (GM-15).
- 1988 - 1989 Research Leader, Biological Control of Pests Research Laboratory, Subtropical Agricultural Research Laboratory, Agricultural Research Service (ARS), USDA, Weslaco, Texas (GS-14).
- 1972 - 1988 Research Entomologist, Insect Attractants, Behavior, and Basic Biology Research Laboratory, ARS, USDA, Gainesville, Florida (GS-14).

### **PERTINENT PUBLICATIONS**

Osborne, L. S., N. C. Leppla and R. S. Osborne. 2001. Biological Control in Specific Crops: Foliage Plants, Chapter 15c. In K. M. Heinz, R. G. Van Driesche and M. P. Parella (Eds.). Biological Control of Arthropod Pests in Protected Culture. Ball Publishing, Batavia, Illinois.

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**THOMAS A. GREEN, Ph.D., 1914 Rowley Ave., Madison, WI 53705, 608 232-1528, 608 232-1530 (fax), ipmworks@ipminstitute.org, www.ipminstitute.org**

PROFESSIONAL EXPERIENCE: 1998–Present. IPM Institute of North America, Inc., Madison, WI. Founder and Board President of non-profit organization formed to establish market recognition of and incentives for Integrated Pest Management (IPM) adoption in agriculture and buildings and grounds maintenance. Projects have included the Environmental Marketing Conference in December, 1999, attended by 110 professionals from three countries; and *IPM Standards for Schools* a guide to more than 750 IPM practices for school buildings and grounds, including references and links to more than 250 resources. Service clients include USDA-CSREES, the Food Alliance, Midwest Food Alliance, CORE Values Northeast and Whole Foods Market.

1995–1998. Gempler's Inc., Mt. Horeb, WI. IPM Product Manager. Responsible for sales of IPM-related products, including weather stations, software, publications, insect traps, and pest monitoring and control products. Grew sales from \$600,000 in 1995 to \$1.4 million in 1997.

1980-1995. Pest Management Supply Inc., Hadley, MA. Founder and President. Distributed a full line of IPM supplies. Developed the business from start-up to \$500,000 per year.

EDUCATION: Ph.D., 1992, and M.S., 1989, Entomology, University of Massachusetts, Amherst, MA. B.A., 1982, Hampshire College, Amherst, MA.

ACADEMIC AWARDS: HARRY ROSENFELD AWARD, awarded by the Dept. of Entomology, University of Massachusetts, for outstanding graduate work in applied entomology. ASA FITCH MEMORIAL AWARD, awarded by the Eastern Branch, Entomological Society of America, for outstanding graduate study for the Masters of Science in Entomology. LOTTA CRABTREE FELLOWSHIP, competitive award of fellowship for 1984-85 academic year. NATIONAL SCIENCE FOUNDATION, Graduate Fellowship Program, honorable mention. UNIVERSITY OF MASSACHUSETTS, Competitive Graduate Fellowship Program, award of fellowship for 1983-84 academic year.

PROFESSIONAL AFFILIATIONS: Entomological Society of America, member

#### RECENT PUBLICATIONS

Green, T.A. 2000. Selling IPM to consumers. *GEMPLER'S IPM Solutions* 5 (6). <http://www.ipmalmanac.com/solutions/200012/selling.asp>

Green, T.A. 2000. IPM is part of program, but not this label. *GEMPLER'S IPM Solutions* 5 (5). [http://www.ipmalmanac.com/solutions/200010\\_label.htm](http://www.ipmalmanac.com/solutions/200010_label.htm)

Green, T.A. 2001. The use of pesticides in your IPM program. *GEMPLER'S IPM Solutions* 6 (3). <http://www.ipmalmanac.com/solutions/200106/pesticides.asp>

Green, T.A. 2001. Wisconsin potatoes to bear World Wildlife Fund panda. *GEMPLER'S IPM Solutions* 6 (2). <http://www.ipmalmanac.com/solutions/200104/panda.asp>

Green, T.A. 2001. Sampling: A key to IPM success. *GEMPLER'S IPM Almanac*. <http://www.ipmalmanac.com/articles/sampling.asp>

Green, T.A. 2001. Areawide pest management: Pooling resources against pests. *GEMPLER'S IPM Almanac*. <http://www.ipmalmanac.com/articles/areawide.asp>

Green, T.A. 2001. Crossing the threshold to increased profits. *GEMPLER'S IPM Solutions* 6 (1). <http://www.ipmalmanac.com/solutions/200102/crossing.asp>

Green, T. A., R. J. Prokopy and D. W. Hosmer. 2002. Distance of detection of synthetic host fruit odor by female apple maggot flies, *Rhagoletis pomonella* (Walsh) (Diptera: Tephritidae). J. Chem. Ecol. (in press).

#### RECENT PRESENTATIONS

2000. Joint Annual Meeting of the Entomology Societies of America and Canada. Montreal QC. IPM insurance: Protecting the players from injury. Symposium; Designing an ecologically grounded IPM game plan: Development, Adoption and Implementation.

2000. Read the Label. Eco-labeling conference hosted by The Food Alliance, Portland OR. IPM and eco-labels: opportunities for collaboration.

2000. UNIVERSITY OF MAINE DEPT. OF BIOLOGICAL SCIENCES, DEPARTMENTAL SEMINAR, Orono ME. Strategies for reducing pesticide risks.

2000. WISCONSIN FRESH FRUIT AND VEGETABLE CONFERENCE, Stevens Point WI. IPM marketing.

2000. NEW BRUNSWICK HORTICULTURAL CONGRESS, Fredericton NB. Marketing your crop with an IPM label.

2001. Annual Meeting of the Entomology Society. San Diego, CA. National IPM in Schools Week.

2001. Ontario Food Processors Association. Marketing IPM to consumers.

2001. US EPA PREP, E. Lansing MI. Marketplace incentives for IPM Adoption.

2001. IPM Coordinators' Workshop, San Francisco City and County Department of the Environment, San Francisco CA. IPM certification in agriculture and communities.

2001. US EPA, Washington DC. IPM: Opportunities for accelerating adoption.

2002. International IPM Conference, Toronto ON. IPM in the marketplace: Do consumers care?

#### RECENT FUNDING OBTAINED

USDA Small Business Innovative Research Program. Award of \$271,000 to support development of financial risk management products for IPM producers. 2001.

US EPA Pesticide Environmental Stewardship Program. Award of \$15,000 to support development of a homework element for the first national IPM in schools week. 2001.

USDA Small Business Innovative Research Program. Award of \$70,000 to support development of financial risk management products for IPM producers. 2000.

US EPA Pesticide Environmental Stewardship Program. Award of \$50,000 to support development of Gempler's IPM Almanac Web site. 2000.

US EPA Pesticide Environmental Stewardship Program. Award of \$50,000 to support development of innovative IPM risk management insurance policies. 1999.

National Science Foundation Center for IPM. Award of \$10,000 to support development of innovative IPM risk management insurance policies. 1999.

USDA CSREES IPM Program. Grant of \$50,000 to support development of a national IPM product and services label. 1999-2000.

# Timothée Sallin

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## Experience

2001–present                      Cherry Lake Tree Farm                      Groveland, FL

### **Business Development**

- Marketing and promoting Cherry Lake Tree Farm brand products to existing customer base while developing new business with strategic target-accounts.
- Assisting in the management of a nine person sales team.
- Participating in the development, implementation, and marketing of Core Processes and Best Management Practices.

Lifelong                                      Cherry Lake Tree Farm                      Groveland, FL

### **Production and Retail (family nursery operation)**

- Container plant production practices.
- Retail sales and marketing.

## Education

1996-2001                                      New College, Univ. of South FL                      Sarasota, FL

- B.A. International Economics
- Thesis: Economic Stabilization and the Role of Monetary Policy in Global Economic Integration: The Case of Argentina and Brazil

1992-1996                                      Lycée Marcel Roby                                      Paris, France

- International Baccalaureate Economics

## EILEEN AMBER BUSS

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### EDUCATION

**Ph.D.** (Horticultural Entomology) 1999, University of Kentucky

**M.S.** (Forest Entomology) 1996, Michigan State University

**B.S.** (General Zoology & German) 1993, Michigan State University

### PROFESSIONAL EXPERIENCE

2001-pres. Assistant Professor, Turfgrass, Ornamental, and Landscape Entomology. Department of Entomology & Nematology, University of Florida.

2000-2001 Research Entomologist and Director of the Industrial Affiliates Program, Dept of Entomology, Purdue University. Conducted research on pavement ants and subterranean termites, assisted with the development of web-based correspondence courses, conducted pesticide applicator training, and mentored graduate students.

### Selected Publications (maiden name Eliason, married name Buss):

Congdon, C. and **E. A. Buss**. 2002. Southern chinch bug management on St. Augustinegrass. University of Florida, IFAS, ENY-325.

**Buss, E. A.** 2001. Insect pest management on turfgrass. Univ. of Florida, IFAS, ENY-300.

**Buss, E. A.** and D. L. Caldwell. 2001. Biology and management of tropical sod webworms. University of Florida, IFAS, ENY-318.

**Buss, E. A.** and D. Short. 2001. Mole crickets in Florida. Univ. of Florida, IFAS, LH-039.

Potter, M.F., **E. A. Eliason**, K. Davis, & R.T. Bessin. 2001. Managing subterranean termites (Isoptera: Rhinotermitidae) in the Midwest with a hexaflumuron bait and placement considerations around structures. *Sociobiology* 38 (3B): 565–585.

**Eliason, E. A.** and D. A. Potter. 2001. Horned oak gall biology and management. *J. Arbor.* 27: 92–101.

**Eliason, E. A.** and D. A. Potter. 2000. Biology of *Callirhytis cornigera* (Hymenoptera: Cynipidae) and its associated gall community in Kentucky. *Environ. Entomol.* 29: 551–559.

**Eliason, E. A.** and D. A. Potter. 2000. Impact of whole-canopy and systemic insecticidal treatments on *Callirhytis cornigera* (Hymenoptera: Cynipidae) and associated parasitoids on pin oak. *J. Econ. Entomol.* 93: 165–171.

Held, D. W., B. Kreuger, N. Mason, R. Lopez, **E. Eliason**, A. Walston, and D. A. Potter. 2000. Effect of post-treatment irrigation on the efficacy of CGA 293,343 (Meridian) against white grubs in turf, 1998. *Arthropod Management Tests* 25:360.

Held, D. W., A. Walston, N. Mason, B. Kreuger, **E. Eliason**, and D. A. Potter. 2000. Evaluation of various insecticides for control of black cutworm on creeping bentgrass, 1998. *Arthropod Management Tests* 25: 346–347.

Held, D. W., T. Eaton, M. Rogers, J. Gels, R. Lopez, **E. Eliason**, and D. A. Potter. 2000. Comparison of Mach2 (halofenozide), Merit (imidacloprid), and Meridian (CGA 293, 343: thiamethoxam) applied for control of white grubs in turf, 1999. *Arthr. Manag. Tests* 25: 361.

# Frank Melton

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## Experience

<b>Employer</b>	<b>Position/Title</b>	<b>Starting Date</b>	<b>Ending Date</b>
UF-Manatee Co. Extension	Extension Agent III	Jul, 99	Present
UF-Manatee Co.Extension	Extension Agent II	1/10/97	Jul, 99
UF-Sarasota Co.Extension	Urban Horticulture	10/4/93	1/9/97
CCI Environmental Services	Nursery Manager	5/1/88	10/1/93
Franks Nursery and Crafts	Horticulturist	2/2/88	5/1/88
Mount Vernon Condominium	Grounds Manager	10/1/85	2/1/88
Horticultural Service Center	Sales and Service	8/2/84	9/1/85
Meltons Garden World	Owner/Manager	11/1/71	8/1/84
UF Extension	Assistant County Agent	10/1/67	11/1/71
Kentucky Division of Forestry	Nursery Superintendent	4/1/63	9/15/64

## Education

M.S.	University of Kentucky	Horticulture	1966
B.S.	University of Florida	Forest Management	1962

## Specialization

Ornamental Production, Integrated Pest Management, Water Management, Plant Nutrition, Environmental Horticulture, Biological Control of Insects, Agribusiness Management, Horticulture and Youth Development, Invasive Plants, Landscape and Systems Ecology, Landscape and Woody Ornamentals, Natural Resource Ethics, Turf, Turfgrass Production, Urban Forestry, Urban Landscapes, Water Quality, Wetlands

## D. Project Budget

Project Period:

From: July 2002

To: June 2004

Budget Category	Grant Funding	Other Funding	Total Funding
Personnel	11,000		11,000
Fringe Benefits	2,000		2,000
Travel	6,400		6,400
Equipment	--		--
Supplies	500		500
Contractual	10,764		10,764
Other (telephone)	982		982
Other (Internet)	250		250
Other (UF Indirect Cost)	7,974		7,974
Total	39,870		39,870

The requested funds are to be used for the activities listed in the timetable. Personnel will be employed to gather information on pesticide use by the producers of woody ornamentals and end users of their products, prepare and circulate documents, participate in meetings, compile and review data, draft program materials, and help build the certification program (\$13,000). They will compile lists of certification criteria, draft educational materials, inspect initial reports, and help to finalize all certification program materials and procedures. These employees will be supervised by both University of Florida and IPM Institute cooperators, as appropriate. They will engage in a significant amount of travel within Florida and between Florida and Wisconsin (\$6,400). Major participants, as listed in the project proposal, from the University of Florida, IPM Institute and Cherry Lake Tree Farm are salaried employees of their respective institutions and will contribute considerable time and expertise to the project. The major participants will also provide equipment, such as vehicles and computers. Telephone use (\$ 982), computer access and support (\$250), graphics expertise, and postage are also available from cooperating institutions. Proposed grant funds will supplement these resources. A relatively major contract is proposed for coordinating the training and management of certification specialists (\$10,764). This activity will be under the leadership of the IPM Institute of North America. The University of Florida requires an indirect cost of 20% for on-campus projects.