

GEORGE J. HOCHMUTH

Professional Achievement Summary

January, 2016

Covering my employment at the University of Florida from August, 1984 through
December 2015

PERSONAL INFORMATION :

The Early Years: I was born in Baltimore, MD and grew up on a commercial vegetable and grain farm in Mardela Springs on the Eastern Shore of Maryland. Oldest of 4 siblings.

Family: Wife – Marilyn (native of Madison, Wisconsin)
Daughters – Melissa (Attorney) and Julie (Business Management) (both graduated from University of Florida)

BUSINESS ADDRESS:

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EDUCATION BACKGROUND :

University of Wisconsin. Plant Breeding and Plant Genetics, PhD, 1980.
University of Maryland. Ornamental Horticulture, BS, 1975.

EMPLOYMENT history:

I came to the University of Florida from the faculty of the University of Massachusetts in the summer of 1984. I began my career at UF in what was called The Vegetable Crops Department (now The Horticultural Sciences Department-HOS). I was with the faculty of HOS on campus until 1999 when I moved to Quincy to assume the Center Director position of the North Florida Research and Education Center (Quincy, Marianna, Monticello, and Live Oak). I returned to Gainesville in 2006 as Associate Dean for Research. In 2009 I joined the Soil and Water Science Department as a faculty member from which I will retire on February 28, 2016.

Summary of positions held:

University of Florida, Professor, Soil and Water Science Department, 2009-present
University of Florida, Professor, Associate Dean for Research, and Associate Director of the Florida Agricultural Experiment Station, June 2006-January 2009.
University of Florida, Professor and Center Director, N. Fla. Res. and Ed. Center, March 1999-June 2006.
University of Florida, Professor Hort. Sciences and Acting Center Director, Suwannee Valley REC, 1997 - 2000.
Univ. Florida Professor Hort. Sciences, August, 1993 - 2009.
Univ. Florida Associate Professor Horticultural Sciences, tenured August, 1987 -1993.
Univ. Florida Assistant Professor, Vegetable Crops Dept., now Hort. Sciences, tenure accruing August, 1984 - August, 1987.
Univ. Massachusetts-Amherst, Assistant Professor, Dept. Plant and Soil Sciences, tenure accruing December, 1980 -August,1984.

YEAR TENURE AWARDED : Tenure awarded by University of Florida - 1987.

AREAS OF SPECIALIZATION :

Research and Extension programs with nutrient management BMPs with agricultural systems and urban horticulture. Since 2009 working on BMPs and environmental science aspects in agricultural crops and urban turf, including soil fertility, nutrient management and leaching and runoff.

Research on fertilization of commercial vegetables, row crops, and specialty crops. Research all aspects of determining best management practices for fertilization, including investigating relationship of nutrient management with groundwater pollution.

Utilization of calibrated soil testing for predicting fertilizer requirements for vegetables and row crops. Research laboratory methodologies for soil testing and then field application for predicting fertilizer requirements for vegetables.

Research on nutrient application schedules for drip irrigation of vegetables. Research N and K timing and amounts for drip-irrigated vegetables.

Research on intensive vegetable plasticulture systems involving polyethylene mulch, transplants, row covers, and drip irrigation. Research new plastics for vegetable culture and new cultural systems, for example, containerized plug transplants for strawberry.

Greenhouse vegetable production. Research all aspects of greenhouse vegetable production, including cultivars, production systems, media, pest control, and environmental management.

University of Massachusetts. Research areas were sweet corn breeding (virus resistance and incorporation of the sugary enhancer (se) gene) and genetics of plant mineral nutrition, especially phosphorus and calcium nutrition of tomato and cauliflower.

CURRENT AND PREVIOUS POSITIONS AND BRIEF RESPONSIBILITIES:

Soil and Water Science Department faculty member (2009 to present):

Research, extension, and teaching assignments in environmental sciences including nutrient management in agricultural and urban systems, best management practices, and irrigation.

Research: Carry out a grant-funded research program in nutrient management for vegetables, row crops, and urban horticulture. Examples of research projects include: determining nitrogen budgets for turfgrass and for several row crops (potato, silage corn, and sweet corn), determining K fertilizer needs of peanut, determining nitrogen management programs for grain corn, and determining nitrate leaching loads for row crops and for turfgrass.

Extension: Carry out an active extension education program for nutrient management in urban horticulture and for vegetable and row crops, including agent in-service training, writing EDIS fact sheets, and conducting on-farm nutrient management demonstrations.

Teaching: I have taught several courses in the department including ALS 3133 (Agriculture and Environmental Quality), SWS 4207/5208 (Sustainable Agricultural and Urban Land Management), SWS 4154/5155 Global Agroecosystems, and SWS 6932 (Agricultural Environmental Quality Issues, Research and Extension).

Horticultural Sciences faculty member (1984-1999):

Led an in-depth research program for statewide vegetable soil and fertilizer management. This included: 1). gathering a databank of relevant research information and conducting research to obtain data where needed, 2). Write scientific publications to disseminate information on fertilizer use in vegetable crops, 3). Train graduate students in fertilizer management and BMPs for vegetables.

Carried out a comprehensive Extension program on production technology and fertilizer management. This involved all facets of vegetable production technology from site selection to harvest and included

gathering a databank of relevant research information to update production guides, carrying out education and demonstration programs, and conducting research projects to obtain needed information.

Led a statewide research program for the Florida greenhouse and hydroponic vegetable industry including programs on greenhouse design and management, and on crop production systems.

Administration (details provided at the end of this resume)

2006-2009. Associate Dean for Research, IFAS. Provided statewide leadership for our research programs in agricultural systems, including animal, crop, and plant systems. Worked with federal and state agencies for funding for programs. Maintained strong relationships with the agricultural commodity groups, allied industries, and all state governmental agencies.

1999-2006. Center Director, NFREC, one of the largest research and education centers in the IFAS system. Provided leadership for the faculty, staff, and programs for the UF-IFAS North Florida Research and Education Center, a four-unit facility covering a wide area of northern Florida, with facilities in Live Oak, FL, Monticello, FL, Marianna, FL, and Quincy, FL. The programs covered a diverse range of commodities and disciplines from 8 academic departments in IFAS. NFREC-Monticello was closed in 2001, and all personnel and programs were moved to NFREC-Quincy. In 2001, NFREC was given responsibility for former Governor Chiles' Jubilee property and facilities in Leon County, which were used for meetings, 4-H events, and wildlife and forestry research programs. There were 24 faculty members and 60 USPS/TEAMS at NFREC in 2006, encompassing all locations and representing 8 departments.

1997-2000. Acting Center Director, Suwannee Valley Research and Education Center. Manage Center budget, facilities, and personnel for a 320-acre research and education center near Live Oak in northern Florida. **Also**, Assistant Department Chair, Horticultural Sciences Department (campus) and responsible for administration of the Department's Horticultural Research Unit in Gainesville.

ASSIGNED ACTIVITIES :

	2010 - 2015	2009 - 2010	2006 - 2009	1999 - 2006	1997 - 1999	1985 - 1997	1984 - 1985
Teaching (%)	30	20	0	5	0	0	0
Research (%)	20	20	0	10	20	20	0
Admin. (%)	0	0	100	75	20	0	0
Extension (%)	50	60	0	10	60	80	100
Total (%)	100	100	100	100	100	100	100

* 1980-1984 faculty member at U of Massachusetts, I carried assignments in research 60% and teaching 40%.

PROFESSIONAL HONORS AND AWARDS :

I am a **Fellow** of the American Society for Horticultural Sciences

Best Paper Award (co-author), 2006, Vegetable Section, Florida State Horticulture Society.

Jim App Award from Fla. Coop. Ext. Serv., for Outstanding Extension Focus Team (with other members), 15 Sept., 2005.

Florida Agricultural County Agents Association Distinguished Service Award, July, 2004.

National Agricultural County Agents Association Distinguished Service Award, July, 2004.

Gamma Sigma Delta Distinguished Leadership Award of Merit, 2004.

President's Gold Medal Award, for recognition of advances to Horticulture from publications over the previous 6 years, Fla. State Hort. Soc. 2002.

Certificate of Appreciation, American Society for Horticultural Science, 2002.

Jim App Award from Fla. Coop. Ext. Serv., for Outstanding Design Team (with other members), Sept., 2002.

FACAA Outstanding Specialist, Florida Agriculture County Agents Assoc., Sept, 10, 2001.

Jackson County Cattlemens Association **Cattleman of the Year** award, November, 2001.

Fellow, American Society for Horticultural Science, July 22, 2001.

Extension Division Educational Materials Award, with D. N. Maynard (for SP-170-"Vegetable Production Guide for Florida"), Amer. Soc. Hort. Sci., Orlando, FL, July, 2000.

Outstanding Paper award (with E. Waldo, D. Cantliffe, and S. Sargent), Vegetable Section, Fla. State Hort. Soc., Oct., 1999.

Extension Publication Award with D.N. Maynard as co-editor and others as authors, "Vegetable Production Guide for Florida" Amer. Soc. Hort. Sci. - Southern Region (Jan. 1999).

Pioneer Award, American Society for Plasticulture, for outstanding career contributions to agriculture, May, 1999.

Outstanding Paper Award, Vegetable Section, Fla. State Hort. Soc. Nov. 5, 1996.

Outstanding Extension Educator Award, American Society for Horticultural Science, 1995.

University of Florida Staff and Faculty Superior Accomplishment Award for 1995, (nominated).

School Service Award for Hydroponic Work, Springhill Middle School. (24 May, 1994).

Extension Publication Award, "Watermelon Production in Florida" (with co-authors), Amer. Soc. Hort. Sci. - Southern Region. (7 Feb., 1994).

Extension Education Aids Award for "Watermelon Production in Florida" (with D. N. Maynard), Amer. Soc. Hort. Sci. (9 Aug., 1994).

Extension Division Award of Excellence, Amer. Soc. Hort. Sci. (9 Aug., 1994).

Extension Publication Award (senior author), Southern Region Amer. Soc. Hort. Science. 1989.

Outstanding Paper Award, (senior author) Vegetable Section, Volume 99 (1987) Proc. Fla. State Hort. Soc.

Gamma Sigma Delta membership, University of Florida, 1988

Outstanding Professor Award in Fruits and Vegetables, University of Massachusetts Stockbridge School of Agriculture, 1982.

The Homeland Garden Club Book Award for Highest Grade Point Average in Ornamental Horticulture, University of Maryland, 1975.

The Joe E. James Award for Highest Grade Point Average in Horticulture, University of Maryland, 1975.

Certificate of Scholarship, Honors Convocation, University of Maryland, 1975.

Maryland Senatorial Scholarship to attend University of Maryland, 1971.

Southern States Farm Cooperative Scholarship to attend University of Maryland, 1971.

LEADERSHIP AND PERSONNEL MANAGEMENT TRAINING.

Some of the training seminars and courses I have taken are listed below:

University of Florida Fall Round Table on Diversity Conference, 26 October, 2004

USDA CREES National Extension Leadership Development (NELD) Program Series of 4 national week-long seminars and workshops and one international experience (October 2003 through June 2005). The NELD seminar series focused on **diversity in academia**.

NELD Seminars:

1. Nashville, TN, October 2003
2. Washington, DC, 29 Feb. to 5 March, 2004
3. Bismarck, ND, October, 2004
4. New Zealand and American Samoa, February, 2005
5. Harriman, NY, June, 2005

LEAD IFAS Administrative Training Workshop, part 1, 11-14 April, 2000, Haines City, FL

LEAD IFAS Administrative Training Workshop, part 2, 9-11 July, 2000, Haines City, FL

LEAD IFAS Administrative Training Workshop, part 3, 14-16 March, 2001, Haines City, FL

LEAD IFAS Administrative Training Workshop, part 4, 15-17 Oct., 2001, Haines City, FL

Florida State University (FSU), Institute for Academic Leadership Workshop, 12-14 June, 2000, Howey-in-the-Hills, FL.

FSU, Institute for Academic Leadership Workshop, 11-13 Oct., 1999, Howey-in-the-Hills, FL.

University of Florida, Supervisory Challenge (1998) - Five-part certificate:

1. Coaching for Success
2. Developing Proactive Employees
3. Stress management
4. Surviving the Challenge of the Problem Employee
5. The Right Person for the Right Job

University of Florida Leadership Conference 18-20 May, 1997, Live Oak, FL

RESEARCH PROGRAM HIGHLIGHTS:

Current CRIS Project: FLA-SWS 005165, The Nutrient Mass Budget: A Tool in Nutrient Management in Agricultural and Urban Environments

First of all, I want to state that accomplishments from my research program have only been possible through the teamwork with many colleagues over the years. There are too many individuals to list; their names appear as co-authors of various research (and extension) publications and have been committee members for my graduate students. I appreciate all the collegiality over the many years.

Over the years I have carried a 20% research FTE. With that 20% assignment, I have led an active and productive research program in my 31 years at the University of Florida. I carried a faculty appointment in the Horticultural Sciences Department with a split assignment in research and extension each year since 1984, until I became Associate Dean. Then, upon returning to the faculty in 2009, I have again carried a 20% FTE in research in the Soil and Water Science Department. The emphasis of the research program since 1984 has been in three major areas, soil fertility and nutrient management best management practices (BMPs) for vegetables, vegetable production systems, and greenhouse vegetable production and management. The work involved original research that resulted in publications of peer-reviewed scientific journal articles, presentations at scientific meetings, and training of graduate students. It has led to changes and updating extension recommendations.

Work began in 1984 to calibrate the Mehlich-1 soil testing extractant for vegetable production and fertilization. Main crops involved in the research were tomato, watermelon, pepper, sweet corn, snap bean, eggplant, and strawberry. The program involved colleagues from several departments, including Horticultural Sciences, Soil and Water Science, Agricultural & Biological Engineering, and Statistics, located on campus and at several research and education centers, and many county agents.. The research was supported by numerous grants totally over \$5 million over a 20-year period. The Mehlich-1 extractant was calibrated for phosphorus and changes were made in the University of Florida Extension recommendations for vegetables. One of the most important findings from this research was that no phosphorus fertilizer was shown to be needed when the soil tested high in native phosphorus content. This finding, while not surprising, was contrary to common grower practice that involved regular additions of P fertilizer. Innovative statistical and new modeling approaches were used to describe crop responses to phosphorus fertilization. The Mehlich-1 extractant performed poorly for predicting potato responses to potassium (a mobile nutrient) fertilization on sandy soils in Florida. Considerable fertilizer rate response trials were conducted for 20 years for many vegetables in Florida on many soils. Results from this research were published in many peer-reviewed journals, and formed the basis for several in-house reviews of the University of Florida Extension vegetable fertilization recommendations. The fertilization research, taken in its whole, formed the basis for moving vegetable production practices into the nutrient Best Management Practices (BMP) era in the 2000s. Research with petiole fresh sap testing procedures led to new recommendations for in-field quick-testing of plant nitrate status in vegetable crops and the technique was rapidly adopted in the state and led to considerable interest in researchers and Extension personnel from around the country. Programs for fertigation (injecting fertilizer into an irrigation system) with drip irrigation were developed for most vegetables growing in plastic mulch culture. The results from this research program and the publications are used all over the country by Extension specialists in other states. My soil science and plant nutrition research program, with my colleagues, during the last three decades formed, in part, the basis for our understanding of nutrient BMPs today in Florida, and the publications are currently being used by the state of Florida to guide them in scientifically supported BMP rule-making processes.

Research on vegetable culture and management began in the early 1980s in the general area of plasticulture (using plastics in the culture of vegetables). Early work began on crop growth enhancement with row covers and plastic tunnels, demonstrating the advantages of row covers to speed up the maturity of crops leading to earlier and more profitable crops. The work on growth enhancement led to work with floating row covers for freeze protection of vegetables and strawberries. Some of the first research with

row covers for freeze protection was published from this program. Extension recommendations were developed from this research and in several years during the freezes of the 1980s, millions of dollars worth of vegetables were saved by row covers, in Palm Beach County alone. Research also was conducted on plastic mulches for vegetables, including new polyethylene mulches, degradable polyethylene mulches, and paper mulches. Research from this program led to the rapid adoption of new high-density polyethylene films for vegetables, adopted by more than 70% of the industry in the late 1990s. Research with drip-irrigation at the North Florida Research and Education Center-Suwannee Valley (NFREC-SV) in Live Oak Florida led to the adoption of drip irrigation by the northern Florida watermelon and vegetable industry, rapidly changing over from overhead sprinkler irrigation. Research also has been conducted on alternative crops and specialty crops for farmers in Florida. These crops include onions, specialty melons, carrots, pickles, pumpkins, specialty peppers, and many others.

Greenhouse vegetable production in Florida has grown from a few producers in 1984 to many producers totaling over 80 acres in the 1990s to more than 400 acres in 2012, making Florida one of the leading states in the country for area under greenhouse production. Research at the NFREC-SV led to the statewide adoption of perlite media-based cultural systems and to the development of the University of Florida nutrient management program. In the early 1980s, a new one-of-a-kind greenhouse vegetable production handbook was produced and now has been updated twice. It remains one of the most popular EDIS documents and I still get emails from around the world about it.

Eutrophication of water bodies from non-point nutrient sources in Florida has been a serious problem and is continuing to challenge the state. As more water bodies are declared impaired for nutrients, particularly nitrogen (N) and phosphorus (P), there is more emphasis on encouraging adoption of best management practices (BMPs). My research program focused on determining and refining BMPs for agricultural and urban environments. A very important basis for understanding BMPs however is missing in much of the research on nutrient management. This missing link is the determination and quantification of the nutrient mass balance for a particular area of concern, a farm, a community, a watershed, a geographic region, etc. The overall goal of my environmental science program is to provide more scientific research for the foundation of science-based BMPs and to train graduate students in the methods and publishing of research. My research program focuses on determining nutrient mass budgets for N and P in several areas. For example we have determined the N and P budgets for a large diversified (crop and livestock) farm in northern Florida, and for the IFAS Dairy Research Unit. These projects are funded by the Water Management Districts, Florida Department of Environmental Protection (FDEP), and The Department of Agriculture and Consumer Services (FDACS).

Another major area of emphasis for my research program is nutrient management in urban watersheds. We have considerable research information of N fertilization of turfgrass, but little research that relates N management with irrigation management. Further there is little information about management of turfgrass nutrition with reclaimed water. Waste water utilities in Florida, in impaired watersheds, must find ways to deal with their nutrient load, and many are looking at the terrestrial environment for its destination. We are determining turf management practices for irrigation and controlled-release fertilizers that will enable turf managers to maintain healthy turf grass while protecting the ground water from leaching. This research was funded by private industry and a grant from the USDA and FDACS Specialty Crops Block Grant Program. The research with reclaimed water was funded by the FDEP and the St. Johns River Water management District. Graduate students and post docs worked on all of the above projects. In addition to graduate students and post docs, I have had international intern students working on projects relating to the overall goals of our research.

Summary of some major research (20% FTE) accomplishments (since 1984).

Program area	Peer-reviewed articles	Major non-refereed research articles	Extramural funding research only	Students/post-docs/interns trained
Soil and nutrient management and BMPs	45	100	\$8 million	25
Crop culture and management	10	50	\$3 million	10
Greenhouse vegetable production	5	20	\$0.2 million	9
Other research activities	5	20	\$0.5 million	5

TEACHING PHILOSOPHY STATEMENTS

Teachers should be role models for students
 Show principles at work
 Have students experience and work with the principles
 Challenge and reward students
 Set high expectations
 Provide opportunities for success

I try to be clear about my expectations for student participation and level of student effort. Students will be clear about the important class material and shown how to use the new information in their lives. I engage students in the course material by encouraging discussion and question/answer. I believe students learn better when there is active involvement and interaction between the teacher and student. Students should learn to think and critically analyze in their classes, rather than return simple answers from rote memory or from word lists. I take periodic moments in the class to ask questions and encourage discussion. I use class activities to encourage engagement and thinking. For example, I ask students to analyze statements for their factuality through searching information sources. I want students to be able to use information learned in their lives by enabling them to recognize and analyze situations, based on information learned. I use power-point presentations, but I use a considerable amount of photos as examples of the information. I have a large library of photos from my work all over the state and nation that are used to illustrate important learning objectives in the class. My courses have mostly moved to the distance-education format which brings challenges to the one-on-one interaction with students. I try to engage students through discussion boards and regular communication by announcements and emails.

TEACHING, ADVISING, AND INSTRUCTIONAL ACCOMPLISHMENTS:

I am a Graduate Faculty member in the Soil and Water Science Department
 I am a member of the Graduate Faculty, SNRE
 I am an Affiliate Faculty of the Water Institute
 I am a University of Florida Prairie Fellow, involved with the Prairie Project, an effort at the university level to enhance sustainability in the University curricula.

Courses Taught:

Note: After retirement I will continue to teach the SWS 4207/5208.

Soil and Water Sciences Department (20 to 30% FTE in teaching over the years):

Courses taught and evaluation summaries. To save space I have included only the overall course and overall instructor values in the tables below.

ALS 3133 Agriculture and the Environment. I co-taught this course with Susan Curry when I first came to the SWS Department. Ms. Curry and I expanded the enrollment cap and then opened a new section in the fall. I then taught the spring course and Ms. Curry taught the fall course. I filled in for Ms. Curry in the summer and fall of 2014. Enrollment was typically between 40 and 60 students each time.

2010

ALS 3133 section 0797 Course Title: Agriculture and Environmental Quality

Spring 2010 – Team taught, my portion = 50%

Number Enrolled - 45

Responses – 35

	Instructor	Dept	College
Instructor Overall	4.29	4.53	4.46
Course overall	4.20	4.45	4.27

2011

ALS 3133 section 0797 Course Title: Agriculture and Environmental Quality

Spring 2011 – Team taught, my portion = 50%

Number Enrolled - 45

Responses – 31

	Instructor	Dept	College
	Mean	Mean	Mean
Instructor Overall	4.10	4.54	4.45
Course overall	4.13	4.41	4.27

2012

ALS 3133, Agriculture and Environmental Quality, spring semester, 58 students

ALS 3133 Spring 2012		Course	Dept	College
Question		mean	mean	mean
10	Overall rating of the instructor	4.41	4.50	4.31
20	Overall, I rate this course as	4.41	4.41	4.19

SWS/AGR 6932 Agriculture and Environmental Research and Extension Issues. This was a summer A travel course that Dr. Jerry Bennett and I developed and taught in 2010, 2011, and 2012, until Dr. Bennett's retirement. We capped the enrollment at 10 students. The course introduced graduate students to the agriculture industry in Florida focusing on the Land Grant system and the science behind the production technologies and the environmental issues and best management practices. This course had both AGR and SWS students separated – resulting in evaluations from each student group.

2010

SWS 6932 **section 0797** Course Title: Agriculture and Environmental Research Issues

Spring 2010 – Team taught, my portion = 50%

Number Enrolled – 2 SWS students in course
 Responses – 2

	Instructor Mean	Dept Mean	College Mean
Instructor Overall	5.00	4.60	4.58
Course overall	5.00	4.51	4.27

AGR 6932 **section 0357** Course Title: Agriculture and Environmental Research Issues
 Spring 2010 – Team taught, my portion = 50%
 Number Enrolled – 3 AGR students in course
 Responses – 3

	Instructor Mean	Dept Mean	College Mean
Instructor Overall	5.00	4.75	4.58
Course overall	5.00	4.57	4.27

2011

Term: 2011 Summer A College: Agricultural and Life Sciences Department: Agronomy Course: AGR6932 Section: 0357 Instructor: Hochmuth,George J,II (0796-1650) Responses: 5 out of 5 (100.00%)				
	Question	Mean	Dept Mean	College Mean
10	Overall rating of the instructor	4.80	4.52	4.47
20	Overall, I rate this course as	4.75		

Term: 2011 Summer A College: Agricultural and Life Sciences Department: Soil and Water Science Course: SWS6932 Section: 0499 Instructor: Hochmuth,George J,II (0796-1650) Responses: 5 out of 5 (100.00%)				
	Question	Mean	Dept Mean	College Mean
	averages	4.67	4.53	4.45
10	Overall rating of the instructor	4.80	4.60	4.47
20	Overall, I rate this course as	5.00		

2012

	ALS 3133 Spring 2012, AGR students	Course	Dept	College
	Question	mean	mean	mean
10	Overall rating of the instructor	4.41	4.50	4.31
20	Overall, I rate this course as	4.41	4.41	4.19

	SWS/AGR 6932 summer 2012, SWS students	Course	Dept	College
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10	Overall rating of the instructor	4.53	4.55	4.41
20	Overall, I rate this course as	4.67	4.59	4.31

SWS 4207/5208 Sustainable Agriculture and Urban Land Management. I developed this course in 2010 and have taught it each fall since then. It began as a campus based live classroom course then moved to combination classroom/distance education (video capture). In 2015, I converted the course to 100% DE by studio green-screen presentations. The course has grown in enrollment nearly every year reaching 30 students in the fall of 2015, the biggest class. The course presents the issues pertaining the nutrients and water management in agriculture and urban systems, covering rules and regulation, and best management practices, all based on the principle of sustainability and the triple bottom line.

SWS 4932/6932, Sustainable Agricultural and Urban Land Management, Fall, 2010
No evaluations available

2011

Term: 2011 Fall College: Agricultural and Life Sciences Department: Soil and Water Science Course: SWS4932 Section: 7874 Instructor: Hochmuth, George J, II (0796-1650) Responses: 4 out of 8 (50.00%) Undergraduates				
	Question	Mean	Dept Mean	College Mean
10	Overall rating of the instructor	5.00	4.52	4.29
20	Overall, I rate this course as	5.00		

Term: 2011 Fall College: Agricultural and Life Sciences Department: Soil and Water Science Course: SWS6932 Section: 7875 Instructor: Hochmuth, George J, II (0796-1650) Responses: 9 out of 9 (100.00%) Graduate students				
	Question	Mean	Dept Mean	College Mean
10	Overall rating of the instructor	4.67	4.52	4.29
20	Overall, I rate this course as	4.67		

2012 several sections

	SWS 4932/6932			sect 03FD	Sect 09C7	sect 7874	sect 03G2	sect 09C9	sect 7875
		Dept	College	2 out of 2	2 out of 2	8 out of 12	1 out of 1	1 out of 1	6 out of 7
10	Overall rating of the instructor	4.49	4.3	4.46	4.46	4.46	4.84	4.84	4.84
20	Overall, I rate this course as	0.00	4.18	4.33	4.33	4.33	4.78	4.78	4.78

2013 several sections

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS4207 Section(s): 02HE Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 85.71% (responded: 6, enrolled:7)								
				Instructor	Course	Dept	College	
	Questions			Mean	Mean	Mean	Mean	
10	Overall rating of the instructor			4.67	4.60	4.60	4.32	
20	Overall, I rate this course as			4.67	4.60	4.53	4.24	

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS5208 Section(s): 02HF Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 66.67% (responded: 2, enrolled:3)								
				Instructor	Course	Dept	College	
	Questions			Mean	Mean	Mean	Mean	
10	Overall rating of the instructor			5.00	5.00	4.60	4.32	
20	Overall, I rate this course as			4.50	4.60	4.53	4.24	

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS5208 Section(s): 028A Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 50.00% (responded: 1, enrolled:2)					
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		Instructor	Course	Dept	College
	Questions	Mean	Mean	Mean	Mean
10	Overall rating of the instructor	5.00	5.00	4.60	4.32
20	Overall, I rate this course as	5.00	4.60	4.53	4.24

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS5208 Section(s): 028F Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 40.00% (responded: 2, enrolled:5)					
		Instructor	Course	Dept	College
	Questions	Mean	Mean	Mean	Mean
10	Overall rating of the instructor	5.00	5.00	4.60	4.32
20	Overall, I rate this course as	4.50	4.60	4.53	4.24

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS4207 Section(s): 0261 Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 100.00% (responded: 3, enrolled:3)					
		Instructor	Course	Dept	College
	Questions	Mean	Mean	Mean	Mean
10	Overall rating of the instructor	4.33	4.60	4.60	4.32
20	Overall, I rate this course as	4.33	4.60	4.53	4.24

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS4207 Section(s): 0262 Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 50.00% (responded: 1, enrolled:2)					
		Instructor	Course	Dept	College
	Questions	Mean	Mean	Mean	Mean
10	Overall rating of the instructor	5.00	4.60	4.60	4.32
20	Overall, I rate this course as	5.00	4.60	4.53	4.24

2014, several sections

SWS4207 sections 0261, 0262, 05H8							
Question	Mean	StdDev	Median	Course	Dept	College	

					Mean	Mean	Mean
10	Overall rating of the instructor	4.50	1.00	5.00	0.00	4.52	4.41
20	Overall, I rate this course as	4.75	0.50	5.00	0.00	4.46	4.33

2014

SWS 5208 section 05H9		Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
	Question						
10	Overall rating of the instructor	4.86	0.38	5.00	4.81	4.52	4.41
20	Overall, I rate this course as	4.67	0.52	5.00	4.80	4.46	4.33

2014

SWS 5208 sections 028A and 028F		Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
	Question						
10	Overall rating of the instructor	4.78	0.44	5.00	0.00	4.52	4.41
20	Overall, I rate this course as	4.89	0.33	5.00	0.00	4.46	4.33

2015, several sections

SWS4207 sections 0261, 0262, 05H8							
	Question	Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
10	Overall rating of the instructor	4.50	1.00	5.00	0.00	4.52	4.41
20	Overall, I rate this course as	4.75	0.50	5.00	0.00	4.46	4.33

2015

SWS 5208 section 05H9		Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
	Question						
	Overall rating of the instructor	4.86	0.38	5.00	4.81	4.52	4.41
20	Overall, I rate this course as	4.67	0.52	5.00	4.80	4.46	4.33

2015

SWS 5208 sections 028A and 028F		Mean	StdDev	Median	Course Mean	Dept Mean	College Mean
	Question						
10	Overall rating of the instructor	4.78	0.44	5.00	0.00	4.52	4.41
20	Overall, I rate this course as	4.89	0.33	5.00	0.00	4.46	4.33

AGR/SWS 4932/6932 Global Agroecology – co-taught with Drs. Rowland and Bennett in AGR, 27 students (Campus and DE). This course was new in 2013. Now it is AGR/SWS 4154/5155.

2013

	Global Agroecosystems				
Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Agronomy Course(s): AGR6932 Section(s): 03H0 Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 100.00% (responded: 4, enrolled:4)					
		Instructor	Course	Dept	College
	Questions	Mean	Mean	Mean	Mean
10	Overall rating of the instructor	4.5	4.52	4.35	4.32
20	Overall, I rate this course as	4.5	4	4.2	4.24

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Agronomy Course(s): AGR6932 Section(s): 03HF Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 60.00% (responded: 3, enrolled:5)					
		Instructor	Course	Dept	College
	Questions	Mean	Mean	Mean	Mean
10	Overall rating of the instructor	4.33	4.52	4.35	4.32
20	Overall, I rate this course as	3.33	4.00	4.20	4.24

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS6932 Section(s): 09C9 Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 50.00% (responded: 1, enrolled:2)					
		Instructor	Course	Dept	College
	Questions	Mean	Mean	Mean	Mean
10	Overall rating of the instructor	5.00	4.92	4.60	4.32
20	Overall, I rate this course as	5.00	4.83	4.53	4.24
Average questions 11-15		5.00	4.74	4.54	4.28

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Course(s): SWS6932 Section(s): 014F Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 50.00% (responded: 1, enrolled:2)						
		Instructor	Course	Dept	College	
	Questions	Mean	Mean	Mean	Mean	
10	Overall rating of the instructor	5.00	4.92	4.60	4.32	
20	Overall, I rate this course as	5.00	4.83	4.53	4.24	

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Agronomy Course(s): AGR4932 Section(s): 142H Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 50.00% (responded: 1, enrolled:2)						
		Instructor	Course	Dept	College	
	Questions	Mean	Mean	Mean	Mean	
10	Overall rating of the instructor	3.00	3.00	3.67	4.35	
20	Overall, I rate this course as	5.00	5.00	5.00	4.20	
Average questions 11-15		5.00	5.00	5.00	4.24	

Term: 2013 Fall College: Agricultural and Life Sciences Department(s): Soil and Water Science Section(s): SWS4932 (1410, 1415) Instructor: Hochmuth,George J,II (0796-1650) Response Rate: 50.00% (responded: 1, enrolled:2)						
		Instructor	Course	Dept	College	
	Questions	Mean	Mean	Mean	Mean	
10	Overall rating of the instructor	5.00	0.00	4.60	4.32	
20	Overall, I rate this course as	5.00	0.00	4.53	4.24	

NEW COURSE: I was asked by the Provost's Office to develop an internet course for Coursera MOOC, based on my graduate course "Sustainable Agricultural and Urban Land Management." **This course was offered in the Spring and Fall 2013 semesters, fall 2015, and spring 2015.** It reaches 10,000 to 20,000 registered global students each time. It is titled "Sustainable Agricultural Land Management" focusing on agriculture.

Horticultural Sciences Department (I did not have a teaching FTE, but participated in the teaching program):

HOS 6905, Seminar Topics, 1 credit, Spring 1987, (co-instructor).

HOS 6565, Advanced Olericulture, 3 credits, Spring, 1997, 1999 (co-instructor).

Massachusetts (while on the faculty I carried a 40% teaching FTE):

Taught vegetable crop production (undergraduate) and Plant Breeding (graduate/undergraduate). Was awarded ***Outstanding Professor*** in 1982.

Invited Lecturer:

Numerous guest lectures in Soil and Water Science, Horticultural Sciences, and Food and Resource Economics Departments over the years of my career.

Teaching Professional Meetings (Presentations by G. Hochmuth)

- *Good to Great*. Administrative Session, 6th Annual CALS Teaching Enhancement Symposium, Gainesville, FL, 17 August, 2005.
- *Demystifying Tenure, Permanent Status, Promotion, and the Academic Personnel Board*. Panel Member in General Session, UF New Faculty Orientation, 14-17 August, 2007.
- Aug 12. 2012 Coursea course Sustainable agricultural land management. CALS Teaching Enhancement Symposium. Hilton, Gainesville, FL.
- August 18, 2015. Hochmuth, G., M. Harrington, J. Weeks, S. Johnson, and R. Cave. CALS Teaching Enhancement Symposium. UF Standards and Markers.

GRADUATE FACULTY STATUS : Member of Graduate Faculty of the University of Florida.

Graduate students mentored from 1984 to 2008 while in HOS Department.

SWS	Degree	Year	Department	Chair/Member	Employment Status
D. Leskovar	PhD	1987 - 90	Hort. Sci.	Member	Texas A/M Univ.
T. Wall	MS	1986 - 8	Hort. Sci.	Chair	Ohio State Univ.
P. Beuker	MA	1986 - 89	Hort. Sci.	Chair	Self employed
T. Jerez	PhD	1987 - 93	Soil Sci.	Member	Unknown
C. Mantilla	MS	1987 - 91	Entomology	Member	Unknown
P. Mott	MS	1988 - 90	Hort. Sci.	Chair	Deceased
I. Debicky	MS	1991 - 93	Agric. Eng.	Member	Unknown
C. Robles	MS	1992 - 94	Hort. Sci.	Member	Ext. US Virgin Islands
P. Soundy	PhD	1992 - 96	Hort. Sci.	Co-chair	Univ. Pretoria, S. Africa
S. Becca	MS	1993 - 95	Agric. Eng.	Member	Unknown
D. Askew	PhD	1993 - 96	Univ. Natal, S. Africa	Outside Examiner	Unknown
T. Reyes	PhD	1994 - 98	Hort. Sci.	Member	Post Doc, Belgium
C. O'Brien	MS	1994 - 96	Hort. Sci.	Member	Unknown
S. Nicola	PhD	1994 - 97	Hort. Sci.	Member	Italy, University faculty
E. Bish	PhD	1994 -2000	Hort. Sci.	Member	NC State University, deceased
N. Shaw	MS	1995 -	Hort. Sci.	Chair	Technician, Univ. Fla.
A. Pacheco	MS	1995 - 97	Hort. Sci.	Co-chair	Industry, Nicaragua
C. Smith	MS	1996 -1999	Hort. Sci.	Chair	U.S. D. A. Ft. Pierce, FL
E. Waldo	MS	1996 -98	Hort. Sci.	Chair	County Agent, Univ. Fla.
M. Arenas	MS	1996 -1999	Hort. Sci.	Co-Chair	Unknown
R. Haring	MS	1998 -1999	Agronomy	Member	Intl. Consultant
E. Jevocich	MS	1998 -2001	Hort. Sci.	Member	Pursue PhD
K. Gunderson	MS	1999 -2000	Hort. Sci.	Member	Nursery, Atlanta, GA
J. Rodriguez	MS	1999 -2001	Hort. Sci.	Member	Unknown
A. Susila	PhD	1998 -2001	Hort. Sci.	Member	Unknown
U.Poonnachit	PhD	1999-2003	Hort. Sci.	Member	Unknown
J. Sanchez	PhD	1999-2004	Soil & Water Sci.	Member	Job in P. Rico
J. Pack	MS	2002-2004	Hort. Sci.	Member	
Josh Freeman	PhD	2004-2008	Hort. Sci.	Member	Assist. Prof., VA Tech. Univ.
Jiangqiang He	PhD	2005-2008	Agric. Biol. Eng.	Member	
Shubin Saha	PhD	2004-	Hort. Sci.	Member	
Aparna Gazula	PhD	2006-2008	Hort.Sci.	Member	Florida CES County extension agent

Continued: Graduate student committees since 2009, joining the SWS Department:

Rishi Prasad	PhD	2009-2013	Soil and Water Science	Chair	Private industry
Maninder Chahal	MS	2010	SWS	member	unknown
Kia Barrett	MS	2012	SWS/SNRE	member	unknown
Yandi Fan	PhD	2013	SWS	member	unknown
Shenseng Wang	PhD	Not completed	SWS	member	unknown
Rajendra Gautam	PhD	2015	SWS	Chair	Post doc UF SWS
Rebecca Hellmuth	MS	2013	SWS	Chair	Clemson Univ. Extension
Ryan Graunke	MS	2012	SWS	Member	Univ. FL (Wilkie)
Jiexuan Luo	PhD	2015	SWS/SNRE	Chair	Private business
Amanda Desormeaux	MS	2014	SWS/SNRE	Chair	Pursuing PhD in SWS
Jessie Weir	MS	2012	Animal Sciences	Member	unknown
Ben Coppinger	MS	2013	SWS	Member	unknown
Basil Wetherington	MS	2013	Environmental Hort.	Member	U. Miss
Neal Beery	MS	2013	SWS	Member	unknown
Jugpreet Singh	PhD	2014	Hort Sci.	Member	unknown
Annie Couch	MS	2015	SWS	Chair	Georgia Park Service
Nathan Holt	MS	2014	Ag and Biol Engin.	member	Post doc, UF
Kelly Racette	MS	2015	AGR	member	UF PhD
Charlie Nealis	PhD	2015	SWS	member	
Marcos Moraes	PhD	2016	SWS	member	
Leigh Ann Shurupey	PhD	2016	Animal Sci.	member	

Distance education students:

I have been chair or member of more than 15 distance education Masters students. I am currently on 6 DE committees. I have been on several committees for the Doctor of Plant Medicine.

Other Student Mentoring Activities

Student	Activity	Year
B. Morrero	Student intern from Puerto Rico	1996
M. Tornero	Student intern from Mexico	1996
Renaldo Cean	Earth	2010-2011
Andressa Freitas	Brazil	2014
Bruno Vasconcellos	Brazil	2015

Post docs and Visiting Scientists

Student/Scientist	Home	Year	Program
Irwin Smith	Univ. Natal, S. Africa	1986-87	Sabbatical leave
Osmar Carrijo	EMBRAPA, Brazil	1996-97	Sabbatical leave
Cesario Chaverria	Forestry, Agric., and Livestock Institute of Mexico	2000-02	Sabbatical leave
Yu Hongjun	Institute of Vegetables and Flowers, Chinese Academy of Agricultural Sciences	2004-2005	Research study leave
Richard Carey	Jamaica	2010	Post Doc
Jinghua Fan	China	2011-2012	Post Doc
Runbin Duan	China	2011-2012	Post Doc

PUBLICATIONS :

Books

Maynard, D.N., and G.J. Hochmuth. 2007. Knotts Handbook for Vegetable Growers, 5th ed. Wiley Interscience, J. Wiley and Sons, New York, NY. 619 pp. Undergoing revision for the 6th edition.

Book Chapters

Hanlon, E., G. Hochmuth, T. O'Breza, and M. Chaplin. 2005. Phosphorus nutrition of vegetable crops and fruits. IN: J. T. Sims and A. N. Sharpley (eds.). Phosphorus: Agriculture and the Environment. The Amer. Soc. Agron., Madison, Wisc.

- Hochmuth, G. J. and D. N. Maynard. 2003. Part 5. Nutritional disorders. P. 59-60. IN: K. Pernezny, P. Roberts, J. Murphy, and N. Goldberg (eds.) Compendium of Pepper Diseases. APS Press. The Amer. Phytopath. Soc. St. Paul, MN.
- Hochmuth, G. J. 2003. Lay-flat bag culture for strawberries in Florida. p. 189. IN: N. F. Childers (ed.) The Strawberry A Book for Growers, Others. ISBN 0-938378-11. Dr. Norman F. Childers Publications, Gainesville, FL. and E. O. Painter Printing Co., Inc., DeLeon Springs, FL.
- Legard, D. E., G. J. Hochmuth, W. M. Stall, J. R. Duval, J. F. Price, T. G. Taylor, and S. A. Smith. 2003. Brief: Strawberry Production in Subtropical Florida. p. 26-30. IN: N. F. Childers (ed.) The Strawberry A Book for Growers, Others. ISBN 0-938378-11. Dr. Norman F. Childers Publications, Gainesville, FL. and E. O. Painter Printing Co., Inc., DeLeon Springs, FL.
- Hochmuth, G. J., E. Kee, T. Hartz, F. Dainello, and J. Motes. 2001. Cultural Management. Pp. 78-97. IN: D. N. Maynard (ed.). Watermelons: Characteristics, Production, and Marketing. ASHS Press, Alexandria, VA.
- Stevens, C., V. A. Khan, J. E. Brown, G. J. Hochmuth, W. E. Splittstoesser, and D. M. Granberry. 1991. Plastic chemistry and technology as related to plasticulture and solar heating of soil. p. 141-158. In: J. Katan and J. E. DeVay (eds.). Soil Solarization. CRC Press, Boca Raton, FL.

Refereed Journal Articles (major authors underlined, *denotes student or post doc)

2015

*Rishi Prasad, George Hochmuth, and Ken Boote. 2015. Estimation of Nitrogen Pools in Irrigated Potato Production on Sandy Soil Using the Model SUBSTOR. PLoS ONE. 10(1): e0117891. doi:10.1371/journal.pone.0117891

2014

Massimiliano, Marvasi, *Jason T. Noel, Andrée S. George, Marcelo A. Farias, Keith T. Jenkins, George Hochmuth, Yimin Xu, Jim J. Giovanonni, and Max Teplitski. 2014. Ethylene signaling affects susceptibility of tomatoes to *Salmonella*. Microbial Biotechnology (2014) 7(6), 545–555 doi:10.1111/1751-7915.12130.

Massimiliano, Marvasi, Andrée S. George, Mihai Giurcanu, George J. Hochmuth, Jason T. Noel, Elizabeth Gause, and Max Teplitski. 2014. Effects of nitrogen and potassium fertilization on the susceptibility of tomatoes to post-harvest proliferation of *Salmonella enterica*. Food Microbiology 43 (2014) 20-27.

Reddy, K. R., and G. J. Hochmuth. 2014. Nutrient (Nitrogen and Phosphorus) Management in Agricultural Catchments for Improving Crop Productivity and Water Quality. In: L.K. Heng, K. Sakadevan, G. Dercon and M.L. Nguyen (eds), Proceedings — International Symposium on Managing Soils for Food Security and Climate Change Adaptation and Mitigation. Food and Agriculture Organization of the United Nations, Rome, 2014: 161–166.

*Fan, Jinghua, George Hochmuth, Jason Kruse, and Jerry Sartain. 2014. Effects of Reclaimed Water Irrigation on Growth and Nitrogen Uptake of Turfgrass. HortTechnology 24(5): 565-574.

2013

*Carey, R.O., G.J. Hochmuth, C.J. Martinez, T.H. Boyer, M.D. Dukes, G.S. Toor, and J.L. Cisar. 2013. Evaluating nutrient impacts in urban watersheds: Challenges and research opportunities. Environmental Pollution. Environmental Pollution. 173 (2013) 138-149.

Massimiliano Marvasi, George Hochmuth, Mihai Giurcanu, Andrée S. George, Jason T. Noel, Jerry Bartz, and Max Teplitski. 2013. Factors that affect proliferation of *Salmonella* in tomatoes post-harvest: The roles of seasonal effects, irrigation regime, crop and pathogen genotype. PLOS ONE Volume: 8 Issue: 12 Article Number: e80871 DOI: 10.1371/journal.pone.0080871.

Bartz, J. A., D. Spiceland, M. Teplitski, and G Hochmuth. 2013. Factors affecting proliferation of *Salmonella enterica* in tomato fruit tissues. *PHYTOPATHOLOGY* Volume: 103 Issue: 6 Supplement: 2 Pages: 12-12.

Hochmuth, G. and D. Maynard. 2013. Nutrient disorders of tomato. IN: *Tomato Disease Compendium*. Amer. Phytopath. Soc. 2013.

2012

*Carey, R.O., G.J. Hochmuth, C.J. Martinez, T.H. Boyer, M.D. Dukes, G.S. Toor, and J.L Cisar. 2012. Evaluating nutrient impacts in urban watersheds: Challenges and research opportunities. *Environmental Pollution*. *Environmental Pollution*. 173 (2013) 138-149.

*Carey, Richard O. , George J. Hochmuth, Christopher J. Martinez, Treavor H. Boyer, Vimala D.Nair, Michael D. Dukes, Gurpal S. Toor, Amy L. Shober, John L. Cisar, Laurie E. Trenholm, and Jerry B. Sartain. *Regulatory and Resource Management Practices for Urban Watersheds: The Florida Experience*. *HortTechnology* August 2012. vol. 22 no. 4:418-429.

*Runbin Duan, Clifford B. Fedler, and George J. Hochmuth. *Tuning to Water Sustainability: Future Opportunity for China Environ. Sci. Technol.* 2012, 46, 5662–5663.

*Jianqiang He, Michael D. Dukes, George J. Hochmuth, James W. Jones, Wendy D. Graham. 2012. Identifying irrigation and nitrogen best management practices for sweet corn production on sandy soils using CERES-Maize model. *Agricultural Water Management* Volume 109, June 2012, Pages 61–70.

*Carey, Richard O. , George J. Hochmuth, Christopher J. Martinez, Treavor H. Boyer, Vimala D.Nair, Michael D. Dukes, Gurpal S. Toor, Amy L. Shober, John L. Cisar, Laurie E. Trenholm, and Jerry B. Sartain. 2012. A Review of Turfgrass Fertilizer Management Practices: Implications for Urban Water Quality. *HortTechnology* 22: 280-291.

Hochmuth, George, Terril Nell, J. Bryan Unruh, and Laurie Trenholm, and Jerry Sartain. 2012. Potential Un-intended Consequences Associated with Urban Fertilizer Bans in Florida—a Scientific Review. *HortTechnology* 22:600-616.

2011

*He, Jianqiang, M. Dukes, G. Hochmuth, W. Graham, and J. Jones. 2011. Evaluation of sweet corn yield and nitrogen leaching with CERES-Maize considering input parameter uncertainties. *Trans ASABE* 54(4): 1258-1267.

Treadwell, D. D., G. J. Hochmuth, R. C. Hochmuth, E. H. Simonne, S. A. Sargent, L. L. Davis, W. L. Laughlin, and A. Berry. 2011. Organic fertilization programs for greenhouse fresh-cut basil and spearmint in a soilless-media trough system. *HortTechnology* 21:162-169.

2008

Simonne, E. H., R. C. Hochmuth, G. J. Hochmuth, and D.W. Studstill. 2008. Development of a N fertigation program for grape tomato. *J. Plant Nutrition*. 31 (12): in press.

Farneselli, M.*, D. W. Studstill, E. H. Simonne, R. C. Hochmuth, G. J. Hochmuth, and F. Tei. 2008. Depth and width of wetted zone after leaching irrigation on a sandy soil and implication for nitrate load calculation. *Commun. Soil Sci. Plant Anal.* 39:1193-1198.

2007

Treadwell, D. D., G. J. Hochmuth, R. C. Hochmuth, E. H. Simonne, L. L. Davis, W. A. Laughlin, Y. Li, T. Olczyk, R. K. Sprenkel, and L. S. Osborne. 2007. Nutrient management in organic greenhouse herb production: Where are we now? *HortTechnology* 17:461-466. (A “top-ten” HortTech publication).

Fishel, F., D. Dubberly, and G. Hochmuth. 2007. Establishing a statewide joint regulatory and extension approach to improving the safe use of pesticides at the University of Florida Institute of Food and Agricultural Sciences. *Jour. Pesticide Safety Education*. *Jour. of Pesticide Safety Education*. 9:15-19. Available at <http://www.jpse.org/v9.html>.

2006

Hochmuth, G., D. Cantliffe, C. Chandler, C. Stanley, E. Bish*, E. Waldo, D. Legard, and J. Duval. 2006. Containerized strawberry transplants reduce establishment-period water use and enhance early growth and flowering compared with bare-root plants. *HortTechnology* 16:46-54.

Hochmuth, G., D. Cantliffe, C. Chandler, C. Stanley, E. Bish*, E. Waldo, D. Legard, and J. Duval. 2006. Fruiting responses and economics of containerized and bare-root strawberry transplants established with different irrigation methods. *HortTechnology* 16:205-210.

Hochmuth, G., J. Brecht, and M. Bassett. Fresh-Market Carrot Yield and Quality Responses to K Fertilization of a Sandy Soil Validated by Mehlich-1 Soil Test. *HortTechnology* 16:270-276.

2005

Soundy, P.*, D. J. Cantliffe, G. J. Hochmuth and P. J. Stoffella. 2005. Management of nitrogen and irrigation in lettuce transplant production affects transplant root and shoot development and subsequent crop yields. *HortScience* 40:607-610.

Chaverria, Cesario Jasso*, G. Hochmuth, R. Hochmuth, and S. Sargent. 2005. Fruit Yield, Size, and Color Responses of Two Greenhouse Cucumber Types to Nitrogen Fertilization in Perlite Soilless Culture. *HortTechnology* 15:565-571.

2003

Hochmuth, G. J. 2003. Progress in mineral nutrition and nutrient management for vegetable crops in the last 25 years. *HortScience*. 38(5):999-1003.

2002

Hochmuth, G. J., P. Weingartner, C. Hutchinson, A. Tilton, and D. Jessemen. 2002. Potato yield and tuber quality did not respond to phosphorus fertilization of soils testing high in phosphorus content. *HortTechnology* 12:420-423.

Hochmuth, G. J., D. N. Maynard. 2002. Generating private-sector funding for Extension programs. *HortTechnology* 12:495-498.

Arenas, M.*, C. S. Vavrina, J. A. Cornel, E. A. Hanlon, and G. J. Hochmuth. 2002. Coir as an alternative to peat in media for tomato transplant production. *HortScience* 37:309-312.

Locascio, S. J., and G. J. Hochmuth. 2002. Watermelon production as influenced by lime, gypsum, and potassium. *HortScience* 37:322-324.

Gunderson, K.*, S. A. Sargent, S. G. Jacob, G. Hochmuth, and D. Cantliffe. 2002. Restructuring state major programs to address performance-based budgeting and issues programming. *HortTechnology* 12:492-495.

Simonne, E., M. Dukes, R. Hochmuth, and G. Hochmuth, D. Studstill, and W. Davis. 2002. Integrated water and nutrient management for bell pepper grown with plasticulture. *Acta. Hort.* 627:97-103

Simonne, E., M. Dukes, R. Hochmuth, and G. Hochmuth, D. Studstill, and W. Davis. 2002. Long-term effects of fertilization and irrigation recommendations on watermelon yield and soil-water nitrate levels in Florida's sandy soils. *Acta. Hort.* 627:181-186.

2001

Soundy, P.*, D. J. Cantliffe, G. J. Hochmuth, and P. J. Stoffella. 2001. Nutrient requirements for lettuce transplants using a floatation irrigation system: I. Phosphorus. HortScience 36: 1066-1070.

Soundy, P.*, D. J. Cantliffe, G. J. Hochmuth, and P. J. Stoffella. 2001. Nutrient requirements for lettuce transplants using a floatation irrigation system: II. Potassium. HortScience 36: 1071-1074.

2000

Carrijo, O. A., and G. J. Hochmuth. 2000. Tomato responses to preplant-incorporated or fertigated phosphorus on soils varying in Mehlich-1 extractable phosphorus. HortScience 35(1): 67-72.

1999

Hochmuth, G.J., J.K. Brecht, and M.J. Bassett. 1999. N fertilization to maximize carrot yield and quality on a sandy soil. HortScience 34 (4): 641-645.

Hochmuth, G., O. Carrijo, and K. Shuler. 1999. Tomato yield and fruit size did not respond to P fertilization of a sandy soil testing very high in Mehlich-1 P. HortScience 34(4): 653-656.

1998

Vavrina, C.S., G.J. Hochmuth, J.A. Cornell, and S.M. Olson. 1998. Nitrogen fertilization of Florida-grown tomato transplants: seasonal variation in greenhouse and field performance. HortScience 33:251-254.

Willcutts, J.F.*, A. R. Overman, G.J. Hochmuth, D.J. Cantliffe, and P. Soundy*. 1998. A comparison of three mathematical models of response to applied nitrogen: A case study using lettuce. HortScience 33:833-836.

Ozores -Hampton, M., T.A. Obreza, and G. Hochmuth. 1998. Using composted wastes on Florida vegetable crops. HortTechnology 8:130-137.

1997

Locascio, S.J., G.J. Hochmuth, F.M. Rhoads, S. M. Olson, A.G. Smajstrla, and E.A. Hanlon. 1997. Nitrogen and potassium application scheduling effects on drip-irrigated tomato yields and leaf tissue analysis. HortScience 32:230-235.

Locascio, S.J., G.J. Hochmuth, S.M. Olson, R.C. Hochmuth, A.A. Cszizszky, and K.D. Shuler. 1997. Potassium source and rate for polyethylene - mulched tomatoes. HortScience 32:1204-1207.

Bish, E.B.*, D.J. Cantliffe, G.J. Hochmuth, and C.K. Chandler. 1997. Development of containerized strawberry transplants for Florida's winter production system. Acta Hort. 439: 461-468.

1996

Hochmuth, G., E. Albrechts, J. Cornell, and C. Chandler. 1996. Nitrogen fertigation requirements of drip-irrigated strawberry. J. Amer. Soc. Hort. Sci. 121:660-665.

Cantliffe, D. J., G. J. Hochmuth, S. J. Locascio, P. A. Stansly, C. S. Vavrina, J. E. Polston, D. J. Schuster, D. R. Seal, D. O. Chellemi, and S. M. Olson. 1996. Production of solanacea for fresh market under field conditions: current problems and potential solutions. Acta Horticulturae. 412:229-244.

Albrechts, E.E., G. J. Hochmuth, C. Chandler, J. Cornell, and J. Harrison*. 1996. Potassium fertigation requirements of drip-irrigated strawberry. J. Amer. Soc. Hort. Sci. 121:164-168.

Hartz, T., and G. Hochmuth. 1996. Fertility management of drip-irrigated vegetables. HortTechnology 6:168-172.

1994

Olson, S. M., G. J. Hochmuth, and R. C. Hochmuth. 1994. Effect of transplanting on earliness and total

yield of watermelon. HortTechnology. 4:141-143.

Hochmuth, G., W. Stall, and R. Hopper. 1994. Certain pesticides can lead to premature degradation of polyethylene mulch in the field. Plasticulture. 100:36-40.

Hochmuth, G. 1994. Current status of drip irrigation for vegetables in the southeastern and mid-Atlantic United States. HortTechnology. 4:390-393.

Hochmuth, G. J. 1994. Sufficiency ranges for nitrate-nitrogen and potassium for vegetable petiole sap quick tests. HortTechnology. 4:218-222.

1993

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Hochmuth, G. J., E. A. Hanlon, and J. Cornell. 1993. Watermelon phosphorus requirements in soils with low Mehlich-1-extractable phosphorus. HortScience. 28:630-632.

Hochmuth, G. J., R. C. Hochmuth, M. E. Donley, and E. A. Hanlon. 1993. Eggplant yield in response to potassium fertilization on sandy soil. HortScience. 28:1002-1005.

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1991

Clark, G. A., C. D. Stanley, D. N. Maynard, G. J. Hochmuth, E. A. Hanlon, D. Z. Haman. 1991. Water and fertilizer management of microirrigated fresh market tomatoes. Trans. Am. Soc. Agric. Eng. 34:429-435.

Hanlon, E. A., G. J. Hochmuth, and O. A. Diaz*. 1991. Mehlich-I soil-test calibration for watermelon: micronutrients. Commun. Soil Sci. Plant Anal. 22(19 and 20):2077-2087.

1987

Csizinszky, A. A., D. N. Maynard, G. J. Hochmuth, and F. G. Martin. 1987. Supplemental fertilization of cucurbits growing in full-bed polyethylene mulch culture. J. Plant Nutr. 10:1479-1488.

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Hochmuth, G. J., D. N. Maynard, A. A. Csizinszky, and R. L. Mitchell. 1986. Small-plot liquid fertilizer injection implements for fertilizing polyethylene-mulched vegetables. HortScience 21:1069-1070.

1985

Hochmuth, G. J. 1985. A gene affecting tomato root morphology. HortScience 20(6):1099-1101.

1984

Hochmuth, G. J. 1984. Variation in calcium efficiency among strains of cauliflower. J. Amer. Soc. Hort. Sci. 109(5):667-672.

LECTURES, SPEECHES AT CONFERENCES AND MEETINGS:

Scientific Meetings (GJH is author/presenter)

I have made an average of 3 presentations per year at major scientific conferences.

Example:

Hochmuth, G. 29 July, 2014. Coursera-Sustainable Agricultural Land Management. Workshop presentation on MOOCs, ASHS. Orlando.

Scientific Meetings (GJH is **Co-author**) There were 70 scientific presentations made by my co-workers and students from 1984 to present. Some of the abstracts are listed below under Abstracts.

Examples:

Luo, Jiexuan, and G. Hochmuth. Nitrogen Concentrations and Exports in Baseflow and Stormflow from Three Small Urban Catchments in Central Florida. Poster. 16 December 2014. AGU Fall Meeting, San Francisco.

Couch, A., G. Hochmuth, and D. Rowland. 2 Nov., 2014. Nitrogen Accumulation By Sesame (*Sesamum indicum* L.) Grown in North Central Florida. Soil Sci. Soc. Amer., Long Beach, CA.

Prasad, R, G. Hochmuth, M. Giurcanu, and R. Mylavarapu. Nov., 2013. In-situ nitrogen mineralization of anaerobically-digested beef cattle manure in sandy soils. Soil Sci. Soc. Amer. Tampa, FL

Gautam, Rajendra and George Hochmuth. Nov., 2013. Evaluation of nitrogen management strategies for impacts on nitrate leaching and quality of St. Augustinegrass turfgrass. Soil Sci. Soc. Amer. Tampa, FL

Desormeaux, A., G. Hochmuth, A. Freitas, and E. Ellison. Aug., 2013. Nitrogen management and leaching with potato. Soil Sci. Soc. Amer. Nitrogen Use Efficiency Conf., Kansas City KS.

ABSTRACTS

Some recent abstracts (major authors underlined, * denotes student or post doc) Listed from 1998 below. An additional 30 abstracts from 1984-1998.

Fan*, Jinghua, George Hochmuth, Jerry Sartain, Jason Kruse. 2013. Effects of Nitrogen Fertilizer and Reclaimed Water Application Rate on Nitrate Leaching From 'Floritam' St. Augustinegrass Soil Sci. Soc. Amer. Conf., Nov 3-6, 2013. Tampa, FL.

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Desormeaux*, Amanda, and G. Hochmuth. 2013. The contributions of nitrogen and irrigation management in reducing the risk of N leaching in Florida potato production. Soil Sci. Soc. Amer. Conf., Nov 3-6, 2013. Tampa, FL. <https://dl.sciencesocieties.org/publications/meetings/2013am/12527/80701>

Prasad*, Rishi, George Hochmuth, and Chris Martinez. 2013. Employing nitrogen budgets for assessment of N loss from agricultural systems: A Florida case study on N management in sandy soils. Soil Sci. Soc. Amer. Conf., Nov. 3-6, 2013. Tampa, FL.

<https://dl.sciencesocieties.org/publications/meetings/2013am/12482/79859>

- Prasad*, R., G. Hochmuth, and C. Martinez. A Florida case study on nitrogen budgeting for potato cultivation. 2012. Soil Sci. Soc. Amer. Conf. Cincinnati.
<https://dl.sciencesocieties.org/publications/meetings/2012am/9734/72333>
- Duan*, Runbin, G. Hochmuth, W. Graham, and D. Graetz. 2012. Soluble reactive phosphorus in sandy soils with commercial vegetable production. Soil Sci. Soc. Amer. Conf. Cincinnati, 2012.
<https://dl.sciencesocieties.org/publications/meetings/2012am/10811/72504>
- Luo*, J., G. Hochmuth, and M. Clark. 2012. A Preliminary Campus Nitrogen Mass Balance Evaluation of Sustainability at university of Florida. Soil Sci. Soc. Amer. Conf. Cincinnati, 2012.
<https://dl.sciencesocieties.org/publications/meetings/2012am/10811/72706>
- Gautam*, Rajendra and George Hochmuth. 2013. Evaluation of nitrogen management strategies for impacts on nitrate leaching and quality of St. Augustinegrass. Soil Sci. Soc. Amer. Conf. Cincinnati, 2012. turfgrass.
<https://dl.sciencesocieties.org/publications/meetings/2012am/9535/72898>
- Fan*, J., G. Hochmuth. Effects of reclaimed water on turfgrass growth and quality. American Water Resources Association, Jacksonville, November 12-15, 2012
- Duan*, Runbin, Hochmuth, Graetz, and Graham. 2012. Temporal and Spatial Distribution of Soluble Reactive Phosphorus in Groundwater at a Dairy Farm in the Suwannee River Basin of Florida. Amer. Assoc. Agric. and Biological Engineers Conference, July 29-July31, Dallas, TX.
- Kahr*, C., G. Hochmuth, and P. Stoffella. 2008. Logistic model predicted potassium fertilizer recommendations using Mehlich-1 soil test indices for cucumber. HortScience 43(4): 1255.
- Simonne, E., R. Hochmuth, G. Hochmuth, D. Studstill, and M. Ozores-Hampton. 2007. Development of a nitrogen fertigation program for grape tomato. HortScience 42(4): 879-880.
- Treadwell, D. D., G. J. Hochmuth, R. C. Hochmuth, E. H. Simonne, S. A. Sargent, L.L. Davis, W. L. Laughlin, T. Olczyk, R. K. Sprenkel, and L. S. Osborne. 2007. Organic greenhouse production of basil and spearmint: Nutrient uptake and postharvest quality. HortScience. 42(4): 868.
- Treadwell, D. D., G. J. Hochmuth, R. C. Hochmuth, E. H. Simonne, S. A. Sargent, L.L. Davis, W. L. Laughlin, T. Olczyk, R. K. Sprenkel, and L. S. Osborne. 2006. Nutrient management for organic greenhouse culinary herbs. Amer. Soc. Hort. Sci. New Orleans, LA, July 2006.
- Shaw, N*, D. Cantliffe, S. Sargent, and G. Hochmuth. 2004. Influence of N fertilization on postharvest fruit quality of drip-irrigated bell pepper. Abstracts of the 17th International Pepper Conf. p 26.
- Shaw, N*, D. Cantliffe, G. Hochmuth, E. Hanlon, and S. Sargent. 2004. Fate of nitrogen in soil under mulched and drip-irrigated pepper beds. Abstracts of the 17th International Pepper Conf. p 27.
- Worthington, C*, E. Simonne, G. Hochmuth, B. Hochmuth, S. Locascio, D. Haman, J. Hornsby, M. Alligood, D. Studstill, and W. Davis. 2003. Irrigation and fertilization practices for the selection of proposed BMPs for watermelon production on sandy soils. HortScience 38:1279.
- Nowak, J., A. Osiecka, G. Hochmuth, K. Lee, and S. Jose. 2003. Nitrate leaching and tree growth following fertilization with diammonium phosphate (DAP) or poultry litter in three year old slash pine and loblolly pine plantations. Abstracts of 12th Biennial Southern Silvicultural Research Conf. Sept., 2003. p. 35.
- Simonne, E., M. Dukes, B. Hochmuth, G. Hochmuth, D. Studstill, and W. Davis. 2002. Real-time irrigation scheduling for drip-irrigated watermelon. HortScience 37(5): 747.
- Simonne, E., M. Dukes, B. Hochmuth, G. Hochmuth, D. Studstill, and W. Davis. 2002. Long-term effect of fertilization and irrigation recommendations on soil-water nitrate levels in sandy soils. XXVI International Hort. Congress, Toronto, Canada. HortScience program book, p. 102.
- Simonne, E., M. Dukes, B. Hochmuth, G. Hochmuth, D. Studstill, and W. Davis. 2002. Integrated water and nutrient management for bell pepper grown with plasticulture. XXVI International Hort. Congress, Toronto, Canada. HortScience program book, p. 106.
- Hochmuth, G., C. Chandler, C. Stanley, D. Legard, J. Duval, E. Waldo*, D. Cantliffe, T. Crocker, and E. Bish*. 2001. Containerized transplants for establishing strawberry crops in Florida. HortScience 36(3):443.
- Cantliffe, D. J., E. Jovicich*, and G. J. Hochmuth. 1999. Where has all the good land gone? Protected vegetable culture-our future. Greenhouse techniques towards the 3rd millennium, an international conference and British-Israeli workshop, Haifa, Israel, 5-8 September, 1999.
- Hochmuth, G., R. Hochmuth, S. Locascio, D. Haman, B. McNeal, J. Kidder, and J. Hornsby. 1999. N management strategies affect watermelon yield and N leaching. HortScience 34(3):522.

- Jovicich, E.*, D. J. Cantliffe, and G. J. Hochmuth. 1999. Plant density and shoot pruning management on yield of a summer greenhouse sweet pepper crop. HortScience 34(3):532.
- O'Hair, S.K., M.L. Lamberts, E. Hanlon, and G. Hochmuth. 1998. Fertility management of Tannia (Xanthosoma sagittifolium) on calcareous soils of southern Florida. Proc. 34th Conf. Caribbean Food Crops Society. p. 33.
- Smith, C.L.*, and G.J. Hochmuth. 1998. Potassium fertilization affects yield and leaf mineral concentration of slicing cucumber. HortScience 33:544-545.
- Waldo, E.A.*, G.J. Hochmuth, D.J. Cantliffe, and S.A. Sargent. 1998. Winter production of muskmelons in northern Florida using protective structures and soilless culture. HortScience 33:545.
- Lamberts, M., S.K. O'Hair, E. Hanlon, and G. Hochmuth. 1998. Findings from a three-year crop nutrient study with four vegetable crops in Dade County, Florida. HortScience 33:534.

Non-refereed publications, including research and extension publications.

(*denotes students). For brevity, a few sample publications are listed below for each year with a summation of all others noted afterwards, **for the period 1995 through 2015**. There was a total 600 publications and revisions for this period. An additional 450 non-refereed publications were written for the period 1984 through 1994. This category includes extension documents (EDIS, newsletters, misc. fact sheets), magazine and newspaper articles, proceedings papers, and other miscellaneous non-refereed documents.

2015 (7 total)

Liu, G. D. E. H. Simonne, K. T. Morgan, G. J. Hochmuth, Monica Ozores-Hampton, and Shinsuke Agehara. 2015. Chapter 2. Fertilizer Management for Vegetable Production in Florida. Florida Cooperative Extension Service fact sheet. CV 296.

Beavers, Casey, Edward A. Hanlon, Matt Wilson, James "Bud" Cates, and George J. Hochmuth. 2015. Sand-Clay Mix in Phosphate Mine Reclamation: Characteristics and Land Use. Florida Cooperative Extension Service fact sheet. SL 423. <http://edis.ifas.ufl.edu/ss636>

**Prasad, Rishi, and George Hochmuth. 2015. Understanding Nitrogen Availability from Applications of Anaerobically Digested Beef-Cattle Manure in Florida Sandy Soil. Florida Cooperative Extension Service fact sheet. SL 424. <http://edis.ifas.ufl.edu/ss637>

**Hellmuth, Rebecca, and George Hochmuth. 2015. Managing Nitrogen Inputs and Outputs on a Dairy Farm. Florida Cooperative Extension Service fact sheet. SL 427. <http://edis.ifas.ufl.edu/ss640>.

**Prasad, Rishi, and George Hochmuth. 2015. Understanding Nitrogen Transformations and Cycling for Sweet Corn Production in Sandy Soils. Florida Cooperative Extension Service fact sheet. SL 430. <http://edis.ifas.ufl.edu/ss643>.

Massimiliano Marvasi, Max Teplitski, and George Hochmuth. 2015. Contribución de las prácticas de producción de cultivos y las condiciones climáticas a la seguridad microbiológica de los tomates y pimientos. Florida Cooperative Extension Service fact sheet. SL 417

Massimiliano Marvasi, Max Teplitski, and George Hochmuth. 2015. Impacto de las variedades de tomate y su estado de madurez en la susceptibilidad a Salmonella. Florida Cooperative Extension Service fact sheet. SL 416.

Chapters in the new EDIS document Nutrient management of vegetable and row crops Handbook, edited by K. Morgan. 2015. **Ten of my current EDIS documents** on nutrient management were included as chapters in the Handbook. FL Coop. Extension Serv. Circular SP500.

2014 (8 total)

Massimiliano Marvasi, George Hochmuth, and Max Teplitski. 2014. The Role of Crop Production Practices and Weather Conditions in Microbiological Safety of Tomatoes and Peppers. SL415 <http://edis.ifas.ufl.edu/ss628>

Massimiliano Marvasi, George Hochmuth, and Max Teplitski. 2014. Impact of Tomato Varieties and Maturity State on Susceptibility of Tomatoes to Salmonella. SL414. <http://edis.ifas.ufl.edu/ss627>

Rao Mylavarapu, Tom Obreza, Kelly Morgan, George Hochmuth, Vimala Nair, and Alan Wright. 2014. Extraction of Soil Nutrients Using Mehlich-3 Reagent for Acid-Mineral Soils of Florida. SL407. <http://edis.ifas.ufl.edu/ss620>

Rishi Prasad, George Hochmuth, and Ann C. Wilkie. 2014. Anaerobic Digesters for Manure Management at Livestock Operations. SL402. <http://edis.ifas.ufl.edu/ss615>

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. Developing a soil test extractant: The correlation and calibration processes. EDIS. <http://edis.ifas.ufl.edu/ss622>

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. Fertilizer recommendation philosophies. <http://edis.ifas.ufl.edu/ss623>.

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. The four Rs of fertilizer management. <http://edis.ifas.ufl.edu/ss624>.

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. Soil testing for plant available nutrients – what is it and why do we do it? <http://edis.ifas.ufl.edu/ss621>

2013 (6 total)

George Hochmuth, Jinghua Fan, Jason Kruse, and Jerry Sartain 2013. Using Reclaimed Water to Irrigate Turfgrass: Lessons Learned from Research with Phosphorus <http://edis.ifas.ufl.edu/ss592>

George Hochmuth, Jinghua Fan, Jason Kruse, and Jerry Sartain. 2013. Using Reclaimed Water to Irrigate Turfgrass: Lessons Learned from Research with Nitrogen <http://edis.ifas.ufl.edu/ss591>

Hochmuth, George, L. Trenholm, D. Rainey, Esen Momol, Claire Lewis, and Brian Neiman. 2013. The Role of Soil Management in Minimizing Water and Nutrient Losses from the Urban Landscape <http://edis.ifas.ufl.edu/ss593>

Hochmuth, George, L. Trenholm, D. Rainey, Esen Momol, Claire Lewis, and Brian Neiman. 2013. Managing Landscape Irrigation to Avoid Soil and Nutrient Losses <http://edis.ifas.ufl.edu/ss586>

Hochmuth, George, L. Trenholm, D. Rainey, Esen Momol, Claire Lewis, and Brian Neiman. 2013. Maximizing the Benefits of Reclaimed Water for Irrigating the Landscape and Protecting the Environment <http://edis.ifas.ufl.edu/ss587>

Hochmuth, George, L. Trenholm, D. Rainey, Esen Momol, Claire Lewis, and Brian Neiman. 2013. Conducting a Blue Dye Demonstration to Teach Irrigation and Nutrient Management Principles in a Residential Landscape <http://edis.ifas.ufl.edu/ss594>

2012 (2 total)

Dan Fenneman, Michael Sweat, George Hochmuth, and Robert Hochmuth Production Systems – Florida Greenhouse Vegetable Production Handbook, Vol 3 (HS785/CV263) <http://edis.ifas.ufl.edu/cv263>

Max Teplitski, Andree George, and George Hochmuth Salmonella and Pathogenic E. coli in the Crop Production Environment: Potential Sources, Survival, and Management (SL375/SS576)

<http://edis.ifas.ufl.edu/ss576>

2011 (9 total)

Hochmuth, George, Ed Hanlon, and Allen Overman. 2011. Fertilizer Experimentation, Data Analyses, and Interpretation for Developing Fertilization Recommendations — Examples with Vegetable Crop Research. Fla. Coop. Ext Serv. Cir. SL 345. <http://edis.ifas.ufl.edu/ss548>.

Hochmuth, G., and E. A. Hanlon. 2011. A Summary of N, P, and K Research with Tomato in Florida. Fla. Coop. Ext Serv. Cir. SL 355. <http://edis.ifas.ufl.edu/cv236>.

Hochmuth, G., and E. Hanlon. 2011. A Summary of N, P, and K Research with Potato in Florida. Fla. Coop. Ext Serv. Cir. SL 346. <http://edis.ifas.ufl.edu/cv233>.

Hochmuth, G., and J. Bennett. 2011. Nutrient Mass Budget -The Case of Florida Watermelon Phosphorus Export. Fla. Coop. Ext Serv. Cir. SL 342. <http://edis.ifas.ufl.edu/ss548>.

Hochmuth, G. 2011. Iron (Fe) Nutrition of Plants. Fla. Coop. Ext Serv. Cir. SL 353. <http://edis.ifas.ufl.edu/ss555>.

Monroe, Martha, and George Hochmuth. 2011. Scholarship in Extension Program Development: The Role of the State Specialist. Fla. Coop. Ext Serv. Cir. FOR 123. <http://edis.ifas.ufl.edu/fr179>.

Martinez, Chris, Mark W. Clark, Guralp S. Toor, George J. Hochmuth, and Lawrence R. Parsons, 2011. Accounting for the Nutrients in Reclaimed Water for Landscape Irrigation. . Fla. Coop. Ext Serv. Cir. AE 479. <http://edis.ifas.ufl.edu/ae479>.

George Hochmuth and Ed Hanlon. 2011. A Summary of N and K Research with Strawberry in Florida. Fla. Coop. Ext Serv. Cir. SL 344. <http://edis.ifas.ufl.edu/cv229>.

Hochmuth, George, Terril Nell, Jerry Sartain, J. Bryan Unruh, Chris Martinez, Laurie Trenholm, and John Cisar. 2011. Urban Water Quality and Fertilizer Ordinances: Avoiding Unintended Consequences: A Review of the Scientific Literature. Fla. Coop. Ext Serv. Cir. SL 283. <http://edis.ifas.ufl.edu/ss496>.

Shober, A., G. Hochmuth, and C. Wiese. 2011 An overview of nutrient budgets for use in nutrient management planning. Fla. Coop. Ext Serv. Cir. SL 361. <http://edis.ifas.ufl.edu/ss562>

2010 (7 total)

Hochmuth, G. J., and E. A. Hanlon. 2010. A summary of N, P, and K research with muskmelon. Fla. Coop. Ext. Serv. SL 329. <http://edis.ifas.ufl.edu/cv231>

Hochmuth, G. J., and E. A. Hanlon. 2010. A summary of N, P, and K research with eggplant. Fla. Coop. Ext. Serv. SL 330. <http://edis.ifas.ufl.edu/cv228>

Hochmuth, G. J., and E. A. Hanlon. 2010. A summary of N, P, and K research with sweet corn. Fla. Coop. Ext. Serv. SL 326. <http://edis.ifas.ufl.edu/cv226>

Hochmuth, G. J., and E. A. Hanlon. 2010. A summary of N, P, and K research with snap bean. Fla. Coop. Ext. Serv. SL 331. <http://edis.ifas.ufl.edu/cv234>

Hochmuth, G. J., and E. A. Hanlon. 2010. A summary of N, P, and K research with watermelon. Fla. Coop. Ext. Serv. SL 325. <http://edis.ifas.ufl.edu/cv232>

Hochmuth, G. J., and E. A. Hanlon. 2010. Principles of sound fertilizer recommendations. Fla. Coop. Ext. Serv. SL 315. <http://edis.ifas.ufl.edu/ss527>

Hochmuth, G. J., and E. A. Hanlon. 2010. Commercial vegetable fertilizer principles. Fla. Coop. Ext. Serv. SL 319. <http://edis.ifas.ufl.edu/cv009>

2009 (6 total)

Hochmuth, G. J., and R. C. Hochmuth. 2009. Blossom-end rot in bell pepper: causes and prevention. Fla. Coop. Ext. fact sheet SL 284. <http://edis.ifas.ufl.edu/ss497>

Hochmuth, G., R. Hochmuth, and R. Mylavarapu. 2009. Using composted poultry manure (litter) in mulched vegetable production. Fla. Coop. Ext. fact sheet SL 293. <http://edis.ifas.ufl.edu/ss506>

Hochmuth, G., and E. Hanlon. 2009. Calculating recommended fertilizer rates for vegetables grown in raised-bed, mulched cultural systems. Fla. Coop. Ext. fact sheet SL 303. <http://edis.ifas.ufl.edu/ss516>

Hochmuth, G., T. Nell, J. Sartain, B. Unruh, M. Dukes, C. Martinez, L. Trenholm, and J. Cisar. 2009. Unintended consequences associated with certain urban fertilizer ordinances. SL 283. <http://edis.ifas.ufl.edu/ss496>

Simonne, E. H., and G.J. Hochmuth. 2009 revised. Soil and fertilizer management for vegetable production in Florida. Fla. Coop. Ext. fact sheet HS 711. <http://edis.ifas.ufl.edu/cv101>
Hochmuth, G. 2009. Plastics and planting. American Vegetable Grower. Feb:p 20-22.

Hochmuth, G., T. Nell, J. Sartain, B. Unruh, M. Dukes, C. Martinez, L. Trenholm, and J. Cisar. 2009. Unintended consequences associated with certain urban fertilizer ordinances. Florida Turf Digest. 26(4): 10-15.

2008 (4 total)

Hanlon, E., L. Shaw, and G. Hochmuth. 2008. Vegetable seedbed preparation on phosphatic clays (revised and updated). Fla. Coop. Extension Serv. Fact Sheet SL223.

Hochmuth, G., with various co-authors. 2008. Facts sheets on greenhouse vegetable production (revised and updated). Fact sheets HS 766 through HS792.

Treadwell, D., R. Hochmuth, G. Hochmuth, E. Simonne, T. Olczyk, K. Migliaccio, R. Sprenkel, and L. Osborne. 2008. Selecting and monitoring fertility regimes in organic greenhouse basil. Vegetarian Newsletter. No. 531:10 pages.

One of several former students who authored a tribute article for Dr. Conrad Link, former undergraduate advisor at University of Maryland. Article titled "75 Years with ASHS: Conrad B. Link." Published in ASHS Newsletter, vol 24(7):6-11.

2007 (7 total)

Olczyk, T., Y. Qian, K. W. Migliaccio, Y. C. Li, G. J. Hochmuth, R. C. Hochmuth, E. H. Simonne, D. D. Treadwell, L. S. Osborne, and R. K. Sprenkel. 2007. Nutrient management for greenhouse production of container grown organic herbs. Proc. Fla. State Hort. Soc. 120: 178-180.

Hochmuth, R., L. Halsey, G. Hochmuth, C. Hutchinson, and L. Landrum. 2007. Keys to successfully choosing enterprises that suit your small farm. Fla. Coop. Ext. Serv. Fact Sheet. HS338. <http://edis.ifas.ufl.edu/HS338>

Migliaccio, K. W., T. Olczyk, Y. Qian, G. J. Hochmuth, R. C. Hochmuth, D. D. Treadwell, E. H. Simonne, L. S. Osborne, and R. K. Sprenkel. 2007. Organic greenhouse container herb production in south Florida: Fertilizer and potting media. Fla. Coop. Ext. Serv. Fact Sheet. ABE 373.

Monroe, M. C. and G. J. Hochmuth. 2007. Scholarship in Extension Program Development: The role of the state specialist. Fla. Coop. Ext. Serv. Fact Sheet. FOR 123. <http://edis.ifas.ufl.edu/FR179>.

Simonne, E. H., and G. J. Hochmuth. 2007. Soil and fertilizer management for vegetable production in Florida. Vegetable Production Handbook for Florida 2007-2008. Fla. Coop. Ext. Serv. Pp. 3-15.

Hochmuth, G.J. and R. C. Hochmuth. 2007. Row covers for growth enhancement. Vegetable Production Handbook for Florida 2007-2008. Fla. Coop. Ext. Serv. p. 31.

Gazula, A*, E. Simonne, D. Studstill, R. Hochmuth, and G. Hochmuth. 2007. Optimization of drainage design for use in research and in field demonstrations. P 14-18, In: Suwannee Valley Twilight Field Day Program Book.

2006 (7 total)

Hochmuth, R. C., G. J. Hochmuth, R. K. Sprenkel, E. H. Simonne, D. D. Treadwell, L. S. Osborne, T. W. Olczyk, and Y. Li. 2006. Adopting new Plasticulture techniques to grow organic herbs in Florida greenhouses. Proc. 33rd Natl. Agric. Plastics Congress, San Antonio, TX, Nov. 2-5.

- Hochmuth, R. C., G. J. Hochmuth, E. H. Simonne, D. W. Studstill, J. H. Chandler, and A. B. Tyree. 2006. Florida extension programs help vegetable growers using Plasticulture to improve water and nutrient management. Proc. 33rd Natl. Agric. Plastics Congress, San Antonio, TX, Nov. 2-5.
- Gazula, A.*, E. Simonne, M. Dukes, G. Hochmuth, B. Hochmuth, and D. Studstill. 2006. Optimization of drainage lysimeter design for field determination of nitrogen loads. Proc. Fla. State Hort. Soc. 119:213-233.
- Olczyk, T., Y. Li, Y. Qian, G. Hochmuth, R. Hochmuth, E. Simonne, D. Treadwell, L. Osborne and R. Sprenkel. 2006. Developing nutrient management program for greenhouse production of culinary herbs. Proc. Interamerican Soc. Tropical Hort. Conference. San Juan, PR 09/06.
- Simonne, E. A., M. Dukes, G. Hochmuth, R. Hochmuth, D. Studstill, and A. Gazula*. 2006. Monitoring nitrate concentration in shallow wells below a vegetable field. Proc. Fla. State Hort. Soc. 119:226-230.
- Studstill, D., E. Simonne, R. Hochmuth, and G. Hochmuth. 2006. Muskmelon fruit yield and quality response to chicken litter used as pre-plant fertilizer. Acta Hort. 712:279-284.
- Simonne, E., R. Hochmuth, C. Starling, S. Kerr, G. Hochmuth, and J. Chandler. 2006. 'Tami G' grape tomato response to nitrogen rates. Acta. Hort. 712:491-495.

2005 (30 total: 7 new, 23 revisions)

- Hochmuth, G., E. Simonne, and B. Bartnick (eds.). 2005. Florida vegetable and agronomic crop water quality and quantity best management practices manual. 190 pp. FL Department of Environmental Protection and Florida Department of Agriculture and Consumer Services, Tallahassee, Fla.
- Hanlon, E. A., G. J. Hochmuth, L. Shaw, and C. Riddle. 2005 (new). Vegetable seed bed preparation on phosphatic clays. Fla. Coop. Ext. Serv. Fact Sheet SL 223. <http://edis.ifas.ufl.edu/SS443>.
- Hochmuth, G., S. Kostewicz, and W. Stall. 2005 (revised). Row Covers for commercial vegetable culture in Florida. Fla. Coop. Ext. Serv. Circ. 728. <http://edis.ifas.ufl.edu/CV201>.
- Hochmuth, G. J. and R. C. Hochmuth. 2005 (new). Greenhouse manufacturers and suppliers. Fla. Coop. Ext. Serv. Fact sheet HS 1020. <http://edis.ifas.ufl.edu/HS255>.
- Hochmuth, G. 2005. Testing 1, 2, 3. Florida Grower magazine. January, p. 17.
- Hochmuth, G. 2005. Timing applications. Crop Focus-Potatoes. Amer. Veg. Grower magazine. Vol. 53:49-50.
- Simonne, E. and G. Hochmuth. 2005. Fertilizer and nutrient management for Tomato. 2005. Florida Tomato Institute Procs. Fla. Coop. Ext. Serv. Misc. Publ. p. 39-44.

As Co-author, revised 23 chapters in Vegetable Production Handbook for Florida, 2004-2005 (revised and updated each year). Edited by S. Olson and E. Simonne.

2004 (40 total: 17 new, 23 revisions)

- Hochmuth, G. and J. Jones. 2004. Timing of initial nitrogen application did not affect potato yield. Proc. Fla. State Hort. Soc. 117:52-54.
- Hochmuth, G. J., J. W. Paterson, and S. A. Garrison. 2004. Fertigation. p. 36-45. IN: W. J. Lamont (ed.). Natural Resource, Agriculture, and Engineering Service. Cornell Cooperative Extension, Ithaca, NY.
- Hochmuth, G. J., D. N. Maynard, C. Vavrina, E. Hanlon, and E. Simonne. 2004. Plant tissue analysis and interpretation for vegetable crops in Florida. Fla. Coop. Ext. Serv. Fact sheet. <http://edis.ifas.ufl.edu/EP081>.
- Hochmuth, G. J., R. C. Hochmuth, and S. M. Olson. 2004. Mulch for early production. American Vegetable Grower magazine. Vol. 52(2) Feb. 2004:P 20.
- Hochmuth, G. 2004. Warming blankets. Using row covers may be a good way to protect vegetables from the cold. Florida Grower. Nov. 2004. p. 16.
- Carte, S., G. Hochmuth, and D. Smith. 2004. Partnership leads BMP adoption in north Florida. Citrus and Vegetable Magazine 69 (3): 14.
- Simonne, E., and G. Hochmuth. 2004. Double-cropping vegetables grown with plasticulture in the BMP era. Citrus and Vegetable Magazine 68 (10): N7-N8.

An additional 10 publications, including fact sheets, newsletters and miscellaneous publications. As Co-author, revised 23 chapters in Vegetable Production Handbook for Florida (revised and updated each year). Edited by S. Olson and E. Simonne, in *EDIS* at <http://edis.ifas.ufl.edu>.

2003 (69 total: 46 new, 23 revisions)

Hochmuth, G. J. and J. T. Jones. 2003. Collecting a poultry litter sample for analysis. Fla. Coop. Ext. Serv. Fact sheet. <http://edis.ifas.ufl.edu/HS189>.

Hochmuth, G., and R. Hochmuth. 2003. Open-field soilless culture of vegetables. Fla. Coop. Ext. Fact sheet. <http://edis.ifas.ufl.edu/HS176>.

Hochmuth, G. 2003. Plant petiole sap-testing for vegetable crops. Fla. Coop. Ext. Serv. <http://edis.ifas.ufl.edu/CV004>.

Hochmuth, G., and A. Smaajstra. 2003. Fertilizer application and management for micro (drip) irrigated vegetables in Florida. Fla. Coop. Ext. Serv. <http://edis.ifas.ufl.edu/CV141>.

Simonne, E., C. Hutchinson, M. Dukes, R. Hochmuth, and G. Hochmuth. 2003. Update and outlook of Florida's BMP program for vegetable crops. Fla. Coop. Ext. Fact sheet. <http://edis.ifas.ufl.edu/HS170>.

Simonne, E., and G. Hochmuth. 2003. Controlled release fertilizers for vegetable crops grown in Florida in the BMP era. Fla. Coop. Ext. Fact sheet. <http://edis.ifas.ufl.edu/HS160>.

An additional 40 publications, including EDIS fact sheets, magazine articles, and newsletter articles.

As co-author, assisted in revision of 23 chapters (same as listed above) in the Commercial Vegetable Production Guide for Florida, and are updated and revised annually. They also are in EDIS at <http://edis.ifas.ufl.edu>, but not as current as the hardcopy.

2002 (30 total: 7 new, 23 revisions)

Hochmuth, G. J., C. Jasso-Chaverria, R. C. Hochmuth, S.C. Stapleton, S. A. Sargent, E. Lamb, and M. Wade. 2002. Field soilless culture as an alternative to soil methyl bromide fumigation for vegetables in Florida. Proc. Fla. State Hort. Soc. 115:197-199.

Hochmuth, G. 2002. Vegetable programs relating to nutrient BMPs. Proc. Fla. Agric. Conf. And Trade Show. Fla. Coop. Ext. Serv. And Vance Publ. p. 30-31.

Lamb, E., D. Neill, G. Hochmuth, S. Stapleton, C. Jasso-Chaverria, and S. Sargent. 2002. In-field soilless culture of tomatoes and peppers as an alternative to methyl bromide. Proc. Fla. Agric. Conf. And Trade Show. Fla. Coop. Ext. Serv. And Vance Publ. p. 36.

Simonne, E. and G. Hochmuth. 2002. Fertilizer and nutrient management for tomato. Proc. Tomato Institute PRO 519, p. 64-69.

Hochmuth, G., R. Hochmuth, and S. Olson. 2002. New technologies in mulching for vegetable production in Florida. Citrus and Vegetable Magazine. 66(11):36.

Simonne, E., M. Dukes, B. Hochmuth, G. Hochmuth, D. Studstill, and W. Davis. 2002. Long-term testing of possible fertilization and irrigation BMPs for watermelon grown in north Florida. UF/IFAS Nutrient Management Education Core Group Newsletter. 3:12-14.

Hutchinson, C. M., W. A. Tilton. P. K. Livingston-Way, and G. J. Hochmuth. 2002. Best management practices for potato production in northwest Florida. Fla. Coop. Ext. Serv. HS 877. http://edis.ifas.ufl.edu/BODY_CV279.

As co-author, assisted in revision of 23 chapters (same as listed above) in the Commercial Vegetable Production Guide for Florida, and are updated and revised annually. They also are in EDIS at <http://edis.ifas.ufl.edu>, but not as current as the hardcopy.

2001 (45 total: 22 new, 23 revisions)

Hochmuth, G., and M. Gal. 2001. Muskmelon fruit response to K source and method of application. Proc. Fla. State Hort. Soc. 114:312-315.

Tyson, R. V., R. C. Hochmuth, E. M. Lamb, G. J. Hochmuth, and M. S. Sweat. 2001. A decade of change in Florida's greenhouse vegetable industry: 1991-2001. Proc. Fla. State Hort. Soc. 114:280-283.

Hochmuth, G. J., R. Rice, and E. A. Simonne. 2001. Phosphorus management for vegetable production in Florida. Fla. Coop. Ext. Serv. Fact Sheet HS 7105, 7pp. <http://edis.ifas.ufl.edu/HS105>.

Hochmuth, G. J., R. C. Hochmuth, and S. M. Olson. 2001. Polyethylene mulching for early vegetable production in northern Florida. Fla. Coop. Ext. Serv. Circular 805, 5pp. <http://edis.ifas.ufl.edu/CV213>.

Hochmuth, G. J., and R. C. Hochmuth. 2001. Nutrient solution formulation for hydroponic (perlite, rockwool, NFT) tomatoes in Florida. Fla. Coop. Ext. Serv. Fact Sheet HS 796, 17pp.
<http://edis.ifas.ufl.edu/CV216>.

An additional 17 publications, including EDIS fact sheets, trade journal articles, newsletters, and miscellaneous publications. As co-author, *assisted in revision of 23 chapters (same as listed above) in the Commercial Vegetable Production Guide for Florida, and are updated and revised annually. They also are in EDIS at <http://edis.ifas.ufl.edu>, but not as current as the hardcopy.*

2000 (59 total: 36 new, 23 revisions)

Smith, C. L., G. J. Hochmuth, and G. Jones. 2000. Cucumber responses to soil Mg and to Mg fertilization were unpredictable. Proc. Fla. State Hort. Soc. 113: 261-265.

Hochmuth, G. J., J. Kidder, and E. A. Hanlon. 2000. Appropriate uses of soil fertility testing and the UF-IFAS standardized fertilization recommendation system: A position paper from the UF-IFAS plant nutrient oversight committee. Proc. Fla. State Hort. Soc. 113: 138-140.

Hochmuth, G. J. 2000. Management of nutrients in vegetable production systems. Soil and Crop Sci. Soc. Proc. 59: 11-13.

Hochmuth, G., and K. Cordasco. 2000. A summary of N, P, and K research with tomato. Fla. Coop. Ext. Serv. <http://edis.ifas.ufl.edu/CV236>.

Hochmuth, G. J., and E. A. Hanlon. 2000. IFAS standardized fertilization recommendations for vegetable crops. Fla. Coop. Ext. Serv. <http://edis.ifas.ufl.edu/CV002>.

Hochmuth, G.J. 2000. Nitrogen management practices for vegetable production in Florida. Fla. Coop. Ext. Serv. <http://edis.ifas.ufl.edu/CV237>.

Hochmuth, G. J., and E. A. Hanlon. 2000. Commercial vegetable fertilization principles. Fla. Coop. Ext. Serv. <http://edis.ifas.ufl.edu/CV009>.

An additional 29 publications, including EDIS fact sheets, trade magazine articles, and newsletters.

As co-author, assisted in revision of 23 chapters (same as listed above) in the Commercial Vegetable Production Guide for Florida, and are updated and revised annually. They also are in EDIS at <http://edis.ifas.ufl.edu>, but not as current as the hardcopy.

1999 (40 total:17 new, 23 revisions)

Jovicich, E., D. J. Cantliffe, and G. J. Hochmuth. 1999. 'Elephant's Foot' a plant disorder in hydroponic greenhouse sweet pepper. Proc. Fla. State Hort. Soc. 112:310-312.

Couto, L., D. Z. Haman, G. J. Hochmuth, and A. G. Smajstrla. 1999. Nitrogen and irrigation management for squash production in north Florida. Proc. Fla. Hort. Soc. 112:329-332.

Waldo, E. A., G. J. Hochmuth, D. J. Cantliffe, and S. A. Sargent. 1999. Technical and economic feasibility of growing 'Galia' muskmelons in the winter in northern Florida using protective structures and soilless culture. Proc. 28th Nat'l. Agric. Plastics Congress, Amer. Soc. Plasticsulture. p. 115.

Jovicich, E., D. J. Cantliffe, and G.J. Hochmuth. 1999. Plant density and shoot pruning on yield and quality of a summer greenhouse sweet pepper crop in northcentral Florida. Proc. 28th Nat'l. Agric. Plastics Congress, Amer. Soc. Plasticsulture. p. 184-187.

An additional 13 publications, including EDIS fact sheets, trade journal articles, newsletters, and miscellaneous publications. *Led the revision of 23 chapters (same as listed above) in the Commercial Vegetable Production Guide for Florida, and are updated and revised annually. They also are in EDIS at <http://edis.ifas.ufl.edu>, but not as current as the hardcopy.*

1998 (65 total:42 new, 23 revisions)

Waldo, E.A.*, G.J. Hochmuth, D.J. Cantliffe, and S.A. Sargent. 1997 (published in 1998). Protected winter production of 'Galia' muskmelons. Proc. Fla. State Hort. Soc. 110:303-306.

Cantliffe, D.J., G.J. Hochmuth, Z. Karchi, and I. Secker. 1997 (published in 1998). Nitrogen fertility requirements for iceberg lettuce grown on sandland with plastic mulch and drip irrigation. Proc. Fla. State Hort. Soc. 110:306-309.

Robles, C.A.*, D.J. Cantliffe, and G.J. Hochmuth. 1997 (published in 1998). Performance of direct seeded and transplanted lettuce grown on the sandy soils of Florida. Proc. Fla. State Hort. Soc. 110:309-314.

Hochmuth, R., L. L. Leon, T. Crocker, D. Dinkins, and G. Hochmuth. 1998. Evaluation of two soilless growing media and three fertilizer programs in outdoor bag culture for strawberry in north Florida. Proc. Fla. State Hort. Soc. 111:341-344.

Hochmuth, R. C., L. L. Leon, and G. J. Hochmuth. 1998. Evaluation of several cultivars of cluster tomatoes for Florida hydroponic greenhouse growers. Proc. Fla. Hort. Soc. 111:70-72.

Hochmuth, R.C., L.C. Leon, and G.J. Hochmuth. 1998. Evaluation of greenhouse cluster-tomato cultivars in Florida. Proc. 27th Nat'l. Agric. Plastics Congr. 27:41-46.

Hochmuth, G., and D. Cantliffe. 1998. The Florida center for plasticulture. Proc. 27th Nat'l Agric. Plastics Cong. 27:231-236.

Hochmuth, G. J., D. Cantliffe, Z. Karchi, and I Secker. 1998. The Florida Center for Plasticulture. Plasticulture.118:58-66.

Plus an additional 34 publications including research reports, newsletter articles, and magazine articles. *Led the revision of 23 chapters (same as listed above) in the Commercial Vegetable Production Guide for Florida, and are updated and revised annually. They also are in EDIS at <http://edis.ifas.ufl.edu>, but not as current as the hardcopy.*

1997 back to 1984. I wrote 450 non-refereed publications for this period, including non-refereed Journal paper, extension educational fact sheets and circulars, trade journal articles, newsletters, research reports, etc. For brevity I have summarized only the total number of these publications.

1981-1983

Numerous research reports, extension reports, and miscellaneous publications pertaining to sweet corn breeding, vegetable culture, and plant nutrition at the **University of Massachusetts**.

CONTRACTS AND GRANTS:

Only those funded are listed

Grants Summary

1985 Total: \$895,405

Florida Institute for Phosphate Research for Polk County Mined Lands Research and Demonstration Center (\$750,000, one of six co-principal investigators, 1 year.)

Polk County for Polk County Mined Lands Research and Demonstration Center (\$118,000, co-principal investigator).

Miscellaneous companies for vegetable production research (\$27,405, Co-PI).

1986 Total: \$129,900

Southwest Florida Water Management District for demonstration of optimum management of water and fertilizer for tomatoes (\$70,475, co-principal investigator).

Florida Tomato Exchange for fertilizer and water management for tomatoes (\$30,000, co-principal investigator).

Southwest Florida Water Management District for row covers for frost protection of strawberries (\$6,325, principal investigator).

Monsanto Chemical Co. for economic evaluation of greenhouse coverings (\$13,100, co-principal investigator).

Miscellaneous companies for vegetable production research (\$10,000, Co-PI).

1987 Total: \$660,150

Florida Institute for Phosphate Research for Polk County Mined Lands Research and Demonstration Center (\$650,000, co-principal investigator).

Miscellaneous companies for vegetable production research (\$10,150, Co-PI).

1988 Total: \$637,710

Florida Institute for Phosphate Research for Polk County Mined Lands Research and Demonstration Center (\$550,320, one of six co-principal investigators, 1 year).

Southwest Florida Water Management District for fertilizer and water demonstrations with drip-Irrigated tomatoes (\$54,900, co-principal investigator, 1 year).

Zellwin Farms for support of plant nutrition and drip irrigation studies (\$7,000, principal investigator, 1 year).
Miscellaneous companies for vegetable production research (\$25,490, Co-PI).

1989 Total: \$560,520

Florida Institute for Phosphate Research for Polk County Mined Lands Research and Demonstration Center (\$550,320, one of six co-principal investigators, 1 year).

Farming Systems Research/Extension for vegetable Demonstrations at Live Oak AREC (\$5,000, principal investigator, 1 year).

Miscellaneous companies for vegetable production research (\$5,200, Co-PI).

1990 Total: \$589,570

Florida Institute for Phosphate Research for Polk County Mined Lands Research and Demonstration Center (\$550,320, one of six co-principal investigators, 1 year).

National Cancer Institute for hydroponic culture of species producing anti-tumor compounds (\$25,000, co-principal investigator, 1 year).

Farming Systems Research/Extension for vegetable demonstrations at Suwannee Valley AREC (\$5,250, principal investigator, 1 year).

Miscellaneous companies for vegetable production research (\$9,000, Co-PI).

1991 Total: \$401,845

Florida Institute for Phosphate Research for Polk County Mined Lands Research and Demonstration Center \$307,450 (one of six co-principal investigators, 1 year).

National Cancer Institute for hydroponic culture of *Taxus* species producing anti-tumor compounds (\$25,000, co-principal investigator, 1 year).

USDA Improved Support Element to Extension Service for Staff Development on Water Quality (\$10,000, principal investigator, 1 year).

IPM Extension for effects of cover crops on nematodes. (\$39,945, cooperator, 1 year).

Miscellaneous companies for vegetable production research (\$19,450, Co-PI).

1992 Total: \$544,713

Florida Institute for Phosphate Research for Polk County Mined Lands Agricultural Research/Demonstration Project (\$337,268, one of six co-principal investigators, 1 year).

Southern Region Sustainable Agriculture Research and Education Program for development of cropping systems for nematode management of agronomic and horticultural crops (\$155,000, cooperator).

IPM Extension Service for IPM for nematode control in vegetables (\$39,945, cooperator).

Extension Service Water Quality Program for potato fertilizer demonstrations (\$10,500, principal investigator).

Miscellaneous companies for vegetable production research (\$2,000, Co-PI).

1993 Total: \$345,055

Florida Institute for Phosphate Research for Polk County Mined Lands Demonstration Project. (\$314,955, co-principal investigator).

Miscellaneous companies for vegetable production research (\$30,100, Co-PI).

1994 Total: \$401,902

Florida Institute for Phosphate Research for Polk County Mined Lands Demonstration Project (\$314,955, co-principal investigator).

South Florida Water Management District for crop nutrient requirements for vegetables on limestone soils (\$22,000, co-principal investigator).

St. Johns River Water Management District for best management practices for potatoes (\$24,500, co-principal investigator).

Miscellaneous companies for vegetable production research (\$40,447, Co-PI).

1995 Total: \$460,105

Florida Institute for Phosphate Research for mined lands agricultural research and demonstration project, (\$314,955, co-principal investigator).

Florida Tomato Committee for tomato fertilization for drip irrigation with emphasis on graywall disorder, (\$12,000, co-principal investigator).

Smith-Lever Federal Water Quality Program for fertilization management for pepper production in Florida, (\$6,650, principal investigator).

St. Johns Water Management District for potato BMPs for tri-county potato area, (\$12,250, co-principal investigator).

South Florida Water Management District for crop nutrient requirement demonstrations for calcareous soils of Dade county, (\$99,000, co-principal investigator).

Miscellaneous companies for vegetable production research (\$15,250, Co-PI).

1996 Total: \$465,000

Florida Tomato Exchange for research on nitrogen and potassium requirements of drip-irrigated tomato in Dade County, (\$15,000, co-principal investigator).

W.K. Kellogg Foundation Fellowship support for visiting student Mario Tornero Campante, (\$4,000, principal investigator).

St. Johns River Water Management District for research and demonstration of best management practices for potato, (\$24,500, co-principal investigator).

South Florida Water Management District for crop nutrient requirement demonstrations, (\$94,000, co-principal investigator).

Inst. Food Agric. Sci, Assistantship Funding for exceptional students - Eric Waldo, (\$10,000, principal investigator).

South Florida Water Management District for research and demonstrations of best nitrogen fertilizer management practices

for vegetables in southern Florida, (\$157,500, co-principal investigator).

Florida Department of Agriculture and Consumer Services Nitrate BMP for nitrogen and phosphorus monitoring in groundwater in vegetable fields of southern Florida (\$50,000, co-principal investigator)

Miscellaneous companies for vegetable production research (\$110,000, Co-PI).

1997 Total: \$313,797

Florida Dept. Agric. Consumer Services for monitoring N beneath intensive crop production sites in the Middle Suwannee River Basin (\$105,747, first of three years, co-principal investigator).

Florida Dept. Agric. Consumer Services for summaries of vegetable fertilization research. (\$30,000 for one year, principal investigator).

Southwest Florida Water Management District for use of containerized strawberry transplants for water conservation and increased early season production (\$24,500, co-principal investigator).

Florida Dept. Agric. Consumer Services for N and P monitoring in groundwater in vegetable fields in southern Florida (\$50,000, co-principal investigator).

Florida Tomato Committee for N and K fertilization of tomatoes in Dade County (\$15,000 for one year, co-principal investigator).

Miscellaneous companies for vegetable production research (\$88,550, Co-PI).

1998 Total: \$2,730,476

Florida Dept. Labor WAGES for training programs for welfare to work. (\$2.5 million, co-principal investigator).

Florida Dept. Agric. Consumer Services for monitoring N beneath intensive crop production sites in the Middle Suwannee River Basin (\$105,000.00 second year of three, co-principal investigator).

Florida Dept. Agric. Consumer Services for vegetable fertilization literature review (\$8,000.00 principal investigator).

Southwest Florida Water Management District for containerized strawberry transplants for water conservation and increased early season production (\$24,500.00, co-principal investigator).

Miscellaneous companies for vegetable production research (\$92,976, Co-PI).

1999 Total: \$1,448,886

Florida Dept. Agric. Consumer Services for monitoring N beneath intensive crop production sites in the Middle Suwannee

River Basin (\$105,000.00 third year of three, co-principal investigator).

Southwest Florida Water Management District for containerized strawberry transplants for water conservation and increased early season production (\$24,500.00, co-principal investigator).

Florida Dept. Agric. Consumer Services for IFAS Livestock Waste Testing Lab and Nutrient Management Program (\$15,000 for 1 year, PI).

USDA-NRCS for IFAS Livestock Waste Testing Lab and Nutrient Management Program (\$15,000 for 1 year, PI).

Suwannee River Water Management District for IFAS Livestock Waste Testing Lab and Nutrient Management Program (\$15,000 for 1 year, PI).

FL DEP for Evaluating Effectiveness of BMPs for Animal Waste and Fertilizer Management to Reduce Nutrient Inputs into Ground Water in the Suwannee River Basin (\$440,690, phase 2, cooperator; 3 years)

FL DACS, Suwannee River WMD, and FL DEP matching funds for Evaluating Effectiveness of BMPs for Animal Waste and Fertilizer Management to Reduce Nutrient Inputs into Ground Water in the Suwannee River Basin (\$833,696, phase 2, cooperator; 3 years).

2000 Total: \$449,796

USDA-NRCS for IFAS Livestock Waste Testing Lab and Program (\$15,000 for 1 year, PI).

USDA Methyl Bromide program for Economic analysis of soilless culture as an alternative to MBr (\$7,000, PI).

Goldkist Poultry Producers for Livestock Waste Testing Lab and Nutrient Management Program (\$3,000 for 1 year, P.I).

FL DEP for Evaluating Effectiveness of BMPs for Animal Waste and Fertilizer Management to Reduce Nutrient Inputs into Ground Water in the Suwannee River Basin (\$146,897, phase 2, cooperator)

FL DACS, Suwannee River WMD, and FL DEP matching funds for Evaluating Effectiveness of BMPs for Animal Waste

and Fertilizer Management to Reduce Nutrient Inputs into Ground Water in the Suwannee River Basin (\$277,899, phase 2, cooperator).

2001 Total: \$1,168,505

FL Legislature appropriation for equipment for NFREC-Quincy (\$800,000, PI, 1 year).

USDA CREES, Special Research Grant, for Environmental Horticulture Project, Green Industries Institute (Co-PI, \$266,005).

FL DACS for vegetable seed grow-out (Co-PI, \$1500).

ASI Europe Group for Evaluation of zeolite as a soil amendment to enhance vegetable crop production in Florida (Co PI with Simonne, \$63,500 for 2 years).

USDA Methyl Bromide Alternatives for Economic analysis of soilless culture as an alternative to MBr (\$7,000, PI, 2nd of 2 years).

GoldKist, Inc. for Livestock Waste Testing Lab (\$3,000, PI).

Sunshine Milk Producers for Livestock Waste Testing Lab (PI, \$5,000 for 1 year).

Suwannee River Water Management District for UF/IFAS Livestock Waste Testing Lab (PI, \$7500 for 1 year).

FL DACS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

USDA NRCS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

2002: Total: \$346,180

USDA Special Research Grant for Feed Efficiency in Cattle (Co-PI with Myer, \$232,180)

GoldKist, Inc. for Livestock Waste Testing Lab (\$3,000, PI).

Sunshine Milk Producers for Livestock Waste Testing Lab (PI, \$5,000 for 1 year).

FL DACS for Field testing nitrate BMPs in watermelon. (Co-PI with Simonne, \$ 45,000 for first of 2 years).

West Vaco Corp. for testing paper mulch for vegetables (Co-PI, \$9,000 for 1 year).

Suwannee River Water Management District for UF/IFAS Livestock Waste Testing Lab (PI, \$7500 for 1 year).

FL DACS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

USDA NRCS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

Fla. Dept. Agric. And Consumer Servs. for Row crop and vegetable BMP manual (P.I., \$30,000 for 2 years).

2003 Total: \$612,473

USDA Special Research Grant for Feed Efficiency in Cattle (Co-PI with Myer, \$223,000)

USDA T-STAR for Field Testing of Possible BMPs for Vegetables Grown in the Caribbean Basin (Co-PI with Simonne, \$50,000 first year of three years).

Florida Dept. Environmental Protection for Evaluating effectiveness of best management practices (BMPs) for animal and fertilizer management to reduce nutrient inputs into groundwater in the Suwannee River basin-phase 3 (Co-PI with Graetz, \$307,773).

Suwannee River Water Management District for UF/IFAS Livestock Waste Testing Lab (PI, \$7500 for 1 year).

FL DACS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

USDA NRCS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

Sunshine Milk Producers for Livestock Waste Testing Lab (PI, \$5,000 for 1 year).

Plastitech, Inc., for new mulch field testing (P.I., \$200.00 for 1 year).

Fla. Dept. Agric. And Consumer Servs. for Row crop and vegetable BMP manual (P.I., \$4,000 for 1 year).

2004 Total: \$1,246,116

FL Department Agriculture and Consumer Services (FDACS) for Integration and verification of water quality and crop yield model for BMP planning (Cooperator, \$405,527).

FL Department Agriculture and Consumer Services (FDACS) for Verification, modification, and demonstration of BMPs in the Suwannee River Basin (Co-PI, \$ 73,684 first year of a 10-year project).

FL Department Agriculture and Consumer Services (FDACS) for Field testing of UF/IFAS livestock waste testing lab manure recommendations (PI, \$12,072).

USDA TSTAR Program for Field testing of possible BMPs for vegetables grown in the Caribbean Basin (Co-PI, \$50,000, second of three years).

USDA TSTAR Program for Development of a system approach to organic greenhouse herb production (Co-PI, \$50,000 first of three years).

FL Department of Environmental Protection for Evaluating effectiveness of BMPs for animal wastes and fertilizer management to reduce nutrient inputs into groundwater in the Suwannee River Basin (Co-PI with Graetz, \$307,733, phase 3).

USDA Special Research Grant for Feed Efficiency in Cattle (Co-PI with Myer, \$290,000)

FL Department Agriculture and Consumer Services (FDACS) for BMP manual development and assistance (PI, \$26,000).

Plastitech, for Research with polyethylene mulches (PI, \$600).

Suwannee River Water Management District for UF/IFAS Livestock Waste Testing Lab (PI, \$7500 for 1 year).

FL DACS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

USDA NRCS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

Sunshine Milk Producers for Livestock Waste Testing Lab (PI, \$5,000 for 1 year).

Goldkist Poultry Producers for Livestock Waste Testing Lab (PI, \$3,000 for 1 year).

2005 Total: \$546,740

Florida Dept. Environmental Protection for Evaluating effectiveness of best management practices (BMPs) for animal and fertilizer management to reduce nutrient inputs into groundwater in the Suwannee River basin-phase 3 (Co-PI with Graetz, \$296,440).

FL Department Agriculture and Consumer Services (FDACS) for Verification, modification, and demonstration of BMPs in the Suwannee River Basin (Co-PI, \$ 58,600 second year of a 10-year project).

Suwannee River Water Management District for UF/IFAS Livestock Waste Testing Lab (PI, \$7500 for 1 year).

FL DACS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

USDA NRCS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

Sunshine Milk Producers for Livestock Waste Testing Lab (PI, \$5,000 for 1 year).

Goldkist Poultry Producers for Livestock Waste Testing Lab (PI, \$3,000 for 1 year).

USDA TSTAR Program for Field testing of possible BMPs for vegetables grown in the Caribbean Basin (Co-PI, \$50,000, third of three years).

USDA TSTAR Program for Development of a system approach to organic greenhouse herb production (Co-PI, \$50,000 second of three years).

FL Department Agriculture and Consumer Services (FDACS) for Field testing of UF/IFAS livestock waste testing lab manure recommendations (PI, with Mylavarapu\$14,700).

FL Department Agriculture and Consumer Services (FDACS) for On-farm nutrient and water management in conjunction with EPA 319 demonstration project (PI \$36,500).

FL Department Agriculture and Consumer Services (FDACS) for BMP manual development and assistance (PI, \$20,000).

Georgia Pacific Trials with "Nitamin 30L" steady delivery fertilizer for vegetables. (PI, \$10,000).

2006 Total: \$153,800

USDA TSTAR Program for Development of a system approach to organic greenhouse herb production (Co-PI with Treadwell, Migliaccio, and B. Hochmuth, \$50,000 third of three years).

FL Department Agriculture and Consumer Services (FDACS) for Field testing of UF/IFAS livestock waste testing lab manure recommendations (PI, \$14,700).

FL Department Agriculture and Consumer Services (FDACS) for Verification, modification, and demonstration of BMPs in the Suwannee River Basin (Co-PI, \$ 58,600 second year of a 10-year project).

Suwannee River Water Management District for UF/IFAS Livestock Waste Testing Lab (PI, \$7500 for 1 year).

FL DACS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

USDA NRCS for UF/IFAS Livestock Waste Testing Lab (PI, \$7500, for 1 year).

Sunshine Milk Producers for Livestock Waste Testing Lab (PI, \$5,000 for 1 year).

Goldkist Poultry Producers for Livestock Waste Testing Lab (PI, \$3,000 for 1 year).

2007 Total: \$24,000

Suwannee River Water Management District for UF/IFAS Livestock Waste Testing Lab (PI, \$7500 for 1 year).

FL DACS for UF/IFAS Livestock Waste Testing Lab (PI, \$8000, for 1 year).

USDA NRCS for UF/IFAS Livestock Waste Testing Lab (PI, \$8000, for 1 year).

Sunshine Milk Producers for Livestock Waste Testing Lab (PI, \$5,000 for 1 year).

Goldkist Poultry Producers for Livestock Waste Testing Lab (PI, \$3,000 for 1 year).

2009 (Total: \$35,250)

Florida Department of Agriculture and Consumer Services, \$28,750, July 1, 2009-June 30, 2010, Updates of N, P, K Summaries for vegetables, PI with Hanlon (100% 1 year)

Spectrum Technologies, July 1, 2009-June 30, 2010, SHARE \$6,500, PI (100%, 1 year)

2010 (Total: \$ 709,252)

GHL Products, July 1, 2010-June 30, 2011, \$10,000, for field-testing of Megagreen turf fertilizer, PI (100%) (5% IDC)

Florida Department of Agriculture and Consumer Services, \$30,000 for *Suwannee Farms nutrient mass balance*, PI (100%) January, 2010-December, 2010. (5% IDC)

Suwannee Farms, \$10,000 for *Suwannee Farms nutrient mass balance*, PI (100%), January, 2010-December, 2010. (5% IDC)

GHD Company, \$5,000 for *Suwannee Farms nutrient mass balance*, PI (100%), January, 2010-December, 2010. (5% IDC)

Scotts-Miracle Grow, \$35,000 for *Urban nutrient management literature review*, PI (100%), with others as co-authors of review paper. Feb., 2010 to Dec. 2010. (5% IDC)

Agrium Technologies, \$42,200 for *Nitrogen use efficiency in turfgrass in the summer months with controlled-release fertilizers*, (100%), with co-PIs Sartain and Trenholm. April 2010 – April 2011. (5% IDC)

USDA/Florida Department of Agricultural Services, Specialty Crops Block Grants Program, \$211,000 for *Florida-Friendly Turfgrass: Benefitting the Environment and Increasing the Competitiveness of the Turfgrass Industry* (100%) with co-PIs Sartain and Dukes. (2011-2012).

USDA/Florida Department of Agricultural Services, Specialty Crops Block Grants Program, \$177,781 for *SAFE HARVEST: Reduction of tomato susceptibility to contamination with Salmonella through cultivar selection, optimized*

fertilization regime and education Project # 87715; (20%) with Teplitski, Bartz, and Schneider. January 2011-Dec. 2012. (no IDC)

University of California Center for Produce Safety, \$188,271, for *Irrigation regime, fruit water congestion and produce safety: parameter optimization to reduce susceptibility of tomatoes and peppers to post harvest contamination, pathogen transfer and proliferation of salmonella*, Project # 87864; (20%) with Teplitski, Bartz, and Schneider. January 2011-Dec. 2012. (no IDC)

2011 (Total: \$96,000)

USDA NRCS, \$5,000 (50%) for Soil potassium variable-rate technologies, January 2012-December 2012. (Co-PI with A Drew))

Florida Department of Agriculture and Consumer Services, \$18,000 for *Suwannee Farms nutrient mass balance*, PI with Martinez (100%) July, 2010-October, 2011.

(Florida Department of Environment Protection \$18,000 for *Suwannee Farms nutrient mass balance*, PI (100%) July, 2010-October, 2011. (5% IDC)

Suwannee River Water Management District, \$18,000 for *Suwannee Farms nutrient mass balance*, PI (100%) July, 2010-October, 2011. (5% IDC)

Suwannee Farms, \$10,000 for *Suwannee Farms nutrient mass balance*, PI (100%), January, 2010-December, 2010. (5% IDC)

Agrium Technologies, \$45,000 for *Controlled-release fertilizers for vegetables*, (100%), February 2011-December 2011.

2012 (Total: \$531,000)

Florida Department of Environmental protection \$169,000 for Turfgrass growth and nutrient uptake from reclaimed water. 2011-2013. PI with J. Sartain.

FDACS, \$75,000 for N and P mass balance for Suwanee Farms. PI with C. Martinez.

Agrium Technologies, \$47,000 for *Controlled-release fertilizers for turfgrass*, (PI).

USDA, NIFA, \$240,000. National Needs Fellows. (Co-PI with J. Bennett, and D. Rowland).

2013 (Total:\$32,600)

FDACS, \$12,600 for N and P mass balance for Suwanee Farms. PI with C. Martinez.

2014 (Total: \$240,121)

FDACS Specialty Crops Block grant. \$175,821. With Max Teplitski T-GAPs optimization for the reduction of Salmonella risk in Florida tomatoes

Florida Peanut Producers Assoc. \$5,500. George Hochmuth and Anthony Drew (Levy County agent). for 1 year.

Potassium nutrient requirements and soil testing with peanut.

Agrium. \$17,500. Controlled-release fertilizers for vegetables (PI).

LidoChem. \$8,500. Effect of humate on cucumber growth and yield (PI).

The Andersons. \$2,800. Drip-irrigation tests with a new fertilizer product. (PI)

FL Watermelon Assoc. \$20,000. R. Hochmuth and G. Hochmuth. 2014. Petiole sap-testing with watermelon.

Ocean Products. \$10,000. with Jim Fletcher. Foliar growth enhancer for turfgrass and sod.

2015 (Total: \$81,500)

Florida Peanut Producers Assoc. \$6,500. With Anthony Drew (Levy County agent). 2015 for 1 year. Potassium nutrient requirements and soil testing with peanut.

FDACS \$75,000. On-farm demonstrations of corn fertilization in the Suwannee Valley Area. (PI with Mylavarapu and Enloe)

2015-2016 Cooperator on the following projects with **Rao Mylavarapu as PI:**

FDEP- Optimization of Predictive Soil Testing Methods for Implementation of Agricultural Best Management Practices in Florida -EPA 319h FDEP funding- \$ 150,659

FDACS-Calibration of Soil Test Interpretations and Nutrient Recommendations for Major Commodities Grown Across Florida as a Best Management Practice for Sustainable Agriculture -FDACS funding- \$190,193

GRANTS TOTALS (PI and Co-PI) for 1985-2007: \$15,133,000

GRANTS TOTALS (PI and Co-PI) for 2009-2015: \$1,726,000

UNIVERSITY AND PROFESSIONAL GOVERNANCE AND SERVICE :

For brevity, only the most recent 12 years of service activities are listed.

2015

Departmental:

SWS T and P Committee.

IFAS and UF committees:

UF IFAS Bahiagrass Taskforce

2014

Departmental:

SWS T and P Committee.

IFAS and UF:

UF IFAS Bahiagrass Taskforce

2013

Departmental:

SWS T & P Review Committee

Mehlich-3 Committee

2012

Departmental:

SWS Administrative Affairs

Peer review, Ms. Susan Curry

Peer review, Zhenli He

SWS T & P Review Committee

2011

University:

Member, University Sustainability Committee

Member University Sustainability Fellows (to lead in developing UFs sustainability curricula)

College:

IFAS Tenure and Promotion Committee

Department:

Departmental Extension Committee, member, January 1, 2010-December 31, 2012

Department Space Committee, chair

Department Campus/REC linkages, chair

SWS Tenure and Promotion Committee

Peer Evaluation Teaching, Z. He (chair)

SWS Administrative Affairs Committee (co-chair)

2010

University:

Member, University Sustainability Committee

Member University Sustainability Fellows (to lead in developing UFs sustainability curricula)

College:

IFAS Tenure and Promotion Committee

Department:

Departmental Extension Committee, member, January 1, 2010-December 31, 2012

Department Space Committee, chair

Department Campus/REC linkages, chair

SWS Tenure and Promotion Committee

2009

University:

UF President's representative to the Florida Foundation Seed Producers BOD

College:

IFAS extension Turf fertilizer publications review task force, Chair,

Department:

Departmental Extension Committee, member, January 1, 2010-December 31, 2012

Poster Judge for SWS Graduate Forum

Panel leader, "Successful Linkages in Research and extension" for SWS Graduate Forum

2008

Chair, Citrus Science Advisory Council

Advisor-Plant Sciences Research and Education Unit Advisory Committee

Chair, ARL/ESTL Advisory Committee

Plant Nutrient Oversight Committee

Suwannee River Partnership Executive Committee

The Ichetucknee Partnership

Member, Board of Directors, Southern Rural Development Center

Member, Board of Directors, Florida Foundation Seed Producers, a UF Direct Support Organization

2007

Chair, Citrus Science Advisory Council

Past Chair, Plant Sciences Research and Education Unit Advisory Committee
ARL/ESTL Advisory Committee
Plant Nutrient Oversight Committee
Suwannee River Partnership Executive Committee
Member, Board of Directors, Southern Rural Development Center
Member, Board of Directors, Florida Foundation Seed Producers, a UF Direct Support Organization

2006

Chair, Search and Screen, Center Director, Mid Florida REC
Chair, Plant Sciences Research and Education Unit Advisory Committee
ARL/ESTL Advisory Committee
Plant Nutrient Oversight Committee
Suwannee River Partnership Executive Committee

2005

University and IFAS Committees:

IFAS Committee on Strategies for Increasing Grants
IFAS, Chair Designate, PSREU Advisory Council
IFAS Plant Nutrient Oversight Committee
Search and Screen, Extension Director, North East District
Co-chair, IFAS Extension Small Farms Focus Team

Other Committees:

Chair, Board of Directors, Florida State Horticultural Society
North Florida Community College Green Industries
Institute Steering Committee

Suwannee River Partnership
Suwannee River Partnership Data Committee
FDACS Row Crop BMP Manual Steering Committee
Administration Skills Development, FACAA

USDA CREES Pest Management Alternatives Program Grant Panel

2004

University and IFAS Committees:

Search and Screen, Sr. VP Agriculture and Natural Resources
Search and Screen, Director IFAS Sponsored Programs Office
Search and Screen, Director IFAS Personnel Affairs Office
Search and Screen, Extension Director, North East District
IFAS Plant Nutrient Oversight Committee

Other Committees:

USDA CREES Pest Management Alternatives Program Panel
NFREC-Suwannee Valley Livestock Waste Testing Lab Oversight
North Florida Community College Green Industries Institute Steering Committee
Suwannee River Partnership
Suwannee River Partnership Data Committee
FDACS Row Crop BMP Manual Steering Committee
Florida Farm Bureau Vegetable Advisory Committee
FDACS Fertilizer Materials Assessment Advisory Group
FDACS Vegetable BMP research project review committee coordinator
Planning Committee, UF/IFAS Certified Crop Advisor

2003

University and IFAS Committees:

Chair, Center Directors
IFAS Plant Nutrient Oversight Committee
Infrastructure and Staffing Support for IFAS Grant/Contract Activity Task Force
Search and Screen, Associate Director, IFAS Planning and Budgeting
IFAS REC Review Task Force
IFAS Ad Hoc Budget Advisory
IFAS Tobacco Education Project Advisory Council
UF ERP Advisory User Council

Other Committees:

NFREC-Suwannee Valley Livestock Waste Testing Lab Oversight
North Florida Community College Green Industries Institute Steering Committee
Suwannee River Partnership
FDACS Row Crop BMP Manual Steering Committee
Florida Farm Bureau Vegetable Advisory Committee
FDACS Fertilizer Materials Assessment Advisory Group

EDITOR AND REVIEWER :

Editing and reviewing has been an important part of my academic career. Each year I review approximately 10 manuscripts for major scientific journals, including national and international journals in the horticultural, agronomic, soil science, and environmental fields.

I have been **Associate Editor** HortTechnology for Amer. Soc. Hort. Sci., handling 20 manuscripts per year for the years from 1999 to 2004.

I have been associate editor for several proceedings including the Florida State Horticultural Society and the American Society for Plasticulture.

I was a Contributing Editor for the American Vegetable Grower Magazine for 10 years during the 1980s and 1990s.

INTERNATIONAL ACTIVITIES :

Over my career I have participated in many international programs and activities. Most of my international work has been to help teach and facilitate adoption of cultural technologies for crop production, especially vegetable and greenhouse crops.

2005

International study of leadership issues in New Zealand and American Samoa, as part of the National Extension Leadership Development (NELD) program, 27 February-12 March, 2005.

2004-2005

Hosted a visiting scientist, Hongjun Yu, from Chinese Vegetable and Flower Academy, to study vegetable fertilization and soil test computerization.

Welcome Address and History Update on Tomato Research in Florida. First Intl. Conference on Tomato Diseases, 17-18 June, 2004, Orlando, FL

2001-2002

Hosted visiting post-doctoral research scholar, Cesario Jasso-Chaverria, from Mexico to conduct research on field soilless culture of vegetables.

Participated in the XXVI International Horticultural Congress, Toronto, Canada, July 2002.

1997

Hochmuth, G., D. Cantliffe, Z. Karchi, and I. Secker. 1997. The plasticulture research and demonstration project in Florida. Int'l. Congress for Plastics in Agriculture. March 9-14. Tel Aviv, Israel.

Hosted visiting research scholar, Osmar Carrijo for a 1-year leave from EMBRAPA, Brazil.

1996

Plasticulture research and demonstration cooperation program with Israeli researcher and industry. Tel Aviv, Israel. Dec. 12-19, 1996.

1995

Plasticulture Seminar lecturer, Hermosillo, Sonora, Mexico, 27 Feb - 1 March, 1995. Participated in educational seminar dealing with nutrient and water management in vegetable culture to expand understanding of management of plasticulture inputs on the vegetable farm.

Dahlia Gredinger International Fertigation Seminar, Haifa, Israel, 20 March - 3 April, 1995. Presented a **keynote** address on nutrient management with drip irrigation for vegetables.

Seminar on Greenhouse Tomatoes, Montreal, Canada, 3-5 August. Presented two talks on nutrient management for tomato production in greenhouses, sharing information on efficient input management.

1994

Oct. 10-19. Beijing, China. Science Management and Technology Workshop. Presented a workshop on management of Extension education program planning and reporting to Chinese government officials.

Hosted several visiting scholars and business people from Israel. Prof. J. Hagin, Technion, Haifa, and J. Ankorian, Rotem Fertilizers, Ashdod, Israel.

1993

Host numerous visitors from abroad e.g. Chinese scholars (Oct. 13-15).

1985-1992

Have hosted numerous international visitors and worked with the Agricultural Attaché for the Israeli embassy in Washington, D.C. to host several visiting scientists.

1992

Presented research paper at meeting of International Agricultural Plastics Congress, held in Granada, Spain, May, 1992.

International Congress of Plastics in Agriculture, May 4-8, 1992, Granada, Spain.

1990

Participated in meeting (out-going President of society, presented research paper) of National Agricultural Plastics Association, Montreal, Canada, May, 1990. This was the first meeting of newly joined Canadian and American Agricultural Plastics organizations under ASP.

1989

President of National Agricultural Plastics Association (NAPA), an international professional society for research and utilization of plastics in agriculture. It was during my presidency that the national organization of NAPA was changed to the international scope organization of American Society for Plasticulture (ASP).

1988

Organized and conducted study tour of greenhouse vegetable production and research in Canada. April, 1988.

Member of planning committee for International Trade Conference to be held in Florida in 1989.

Hosted visiting professor from University of Natal, South Africa on his sabbatical leave.

1987

Appointed to editorial board of American Vegetable Grower **Magazine, a monthly with international circulation.**

1986

Presented paper at International Society for Horticultural Science, Davis, CA. Aug. 4-16.

EXTENSION PROGRAM (1984-2015):

Accomplishments of my extension program are due in large part to the teamwork with state extension specialist colleagues and the county agents. While on the faculty of the Horticultural Sciences Department, I carried split appointment in research and extension. My work in vegetable extension covered mainly three programmatic areas, nutrient management and water quality, vegetable production systems, and greenhouse vegetable culture. My program focused on identifying problems needing educational assistance, working with state colleagues and the agents to deliver educational programs, writing educational materials, and following-up with documenting impacts.

The major areas of emphasis were:

- Writing Extension fact sheets and circulars
- Leading the state major program and design team for vegetables
- Carrying out in-service training programs
- Carrying out on-farm fertilizer management demonstrations
- Working directly with county agents in the field

Examples of some of the major extension programs I have led over the years are summarized below. While the list below presents vegetables and row crops, I have had analogous programs for nutrient use and water quality for urban horticulture, especially turfgrass.

Efficient Nutrient Management for Vegetables and Row Crops

Situation

Commercial vegetable producers apply more than the amount of fertilizer recommended by the University of Florida. For example, some tomato growers apply more than 300 pounds of nitrogen per acre when recommendations are for 200 pounds N per acre. Potato growers apply 275 pounds N per acre when recommendations are 200 pounds per acre. Grain corn growers use more than 300 lb/acre N. Over-

fertilization reduces farm profitability and could result in pollution of ground or surficial waters. Considerable research has been conducted on soil testing and technologies for managing fertilizers. These technologies, or best management practices, need to be adopted by growers so that profitability is increased and pollution potential is minimized. In addition, over-fertilization, especially with N, can lead to leaching losses. We have conducted numerous on-farm demonstrations of N fertilization and leaching using in-situ drainage lysimeters.

Audience: The commercial vegetable and row crop producers of Florida

Objectives

The objective of this Extension program is to help growers adopt IFAS recommendations for commercial vegetable and row crop fertilization. A measurable objective of this program was to have 20% of tomato and potato growers adopt reduced fertilizer programs. Part of this objective is met by specialized training of IFAS county Extension agents so they can better deal with questions from growers. Another major part of this program involves updating extension publications and creating new publications and educational materials, including electronic publications, as needed.

Activities

The major activities of the fertilizer management Extension program are:

1. **Demonstrations:**
More than 100 on-farm field demonstrations have been conducted throughout Florida since 1984 to demonstrate IFAS fertilizer recommendations for at least 20 vegetables and three row crops in nearly all major vegetable- and row crop-producing counties. For example we have just concluded (2015) 6 on-farm demonstrations of N management for grain corn in 5 northern Florida counties.
2. **Workshops and Institutes:**
Presented more than 100 talks on fertilizer management at various workshops and Institutes since 1984.
3. **Agent In-Service Training:**
Presented topics on fertilizer management for commercial vegetable production at many (average of 2 per year) Agent In-Service Training programs. Many of these ISTs were organized by teams that I led.
4. **Seminars and Grower Meetings:**
Made presentations on fertilization and nutrient best management practices at more than 200 grower meetings over the 1984-2015 period, averaging about 10 per year.
5. **Publications:**

Authored and co-authored more than 150 publications (**see publication lists above**) dealing with fertilization of vegetables in Florida. Many of these were major circulars dealing with fertilizer management. (some **recent** examples, ** denotes graduate student):

Prasad**, Rishi, and George Hochmuth. 2015. Understanding nitrogen availability from applications of anaerobically digested beef-cattle manure in Florida sandy soil. Florida Cooperative Extension Service fact sheet. SL 424. <http://edis.ifas.ufl.edu/ss637>

Hellmuth**, Rebecca, and George Hochmuth. 2015. Managing nitrogen inputs and outputs on a dairy farm. Florida Cooperative Extension Service fact sheet. SL 427. <http://edis.ifas.ufl.edu/ss640>.

Prasad, Rishi**, and George Hochmuth. 2015. Understanding nitrogen transformations and cycling for sweet corn production in sandy soils. Florida Cooperative Extension Service fact sheet. SL 430. <http://edis.ifas.ufl.edu/ss643>.

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. Developing a soil test extractant: The correlation and calibration processes. EDIS. <http://edis.ifas.ufl.edu/ss622>

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. Fertilizer recommendation philosophies. <http://edis.ifas.ufl.edu/ss623>.

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. The four Rs of fertilizer management. <http://edis.ifas.ufl.edu/ss624>.

Hochmuth, G., R. Mylavarapu, and E. Hanlon. 2014. Soil testing for plant available nutrients – what is it and why do we do it? <http://edis.ifas.ufl.edu/ss621>

George Hochmuth, Jinghua Fan, Jason Kruse, and Jerry Sartain 2013. Using Reclaimed Water to Irrigate Turfgrass: Lessons Learned from Research with Phosphorus
<http://edis.ifas.ufl.edu/ss592>

George Hochmuth, Jinghua Fan, Jason Kruse, and Jerry Sartain. 2013. Using Reclaimed Water to Irrigate Turfgrass: Lessons Learned from Research with Nitrogen
<http://edis.ifas.ufl.edu/ss591>

Accomplishments

On-farm demonstrations have confirmed the IFAS fertilization recommendations in at least 90% of the cases. It is estimated that 30% of tomato growers and 25% of potato growers have reduced fertilizer rates over the course of these Extension fertilization demonstrations. Much of the effort in this Extension program has focused on improving both fertilizer and water management. Approximately 25% of potato and tomato growers are now using some type of irrigation management tool (tensiometers, water table monitors, etc.). Approximately 20% of vegetable growers are using our plant sap tissue testing protocol. Sap testing is providing a good tool to monitor plant nutrient status enabling growers to become more efficient fertilizer managers. Reduced nitrogen rates over 4 years of cropping on half of a center pivot on a commercial vegetable farm in Suwannee County resulted in a 20% average reduction in nitrates in the groundwater, compared to the grower fertilization program on the other half of the pivot.

B. Cultural Systems Technology Adoption for Vegetables

Situation

Florida leads nationally and regionally (Caribbean, Latin America region) in production of many vegetables. This leadership is largely due to a higher level of production technology in Florida compared to other states and neighboring countries. Technologies such as polyethylene mulch, drip irrigation, frost protection, disease-resistant varieties, etc. have helped Florida growers out-produce competitors. However, these technologies have not been adopted fully by the Florida vegetable industry. For example, polyethylene mulch, used widely in southern Florida was not widely used in northern Florida in the early 1980s. Mulch helps produce earlier (more profitable) crops and protects fertilizers from being leached. New technologies are being developed by IFAS scientists and these need to be demonstrated on commercial farms. Phosphatic clays represent almost 100,000 acres of underutilized land in Polk County. Vegetable production could represent a means to benefit economically from these soils and return more ad valorem taxes to the county.

Audience: The commercial vegetable producers of Florida.

Objectives

The objective of this production practices program is to assist commercial vegetable growers in the adoption of new technologies. A measurable goal in the beginning (1984 to 1990) was to have 50% of the watermelon growers adopt plastic mulch and drip irrigation. Emphasis has been placed on technologies such as transplanting, frost protection, and plastic mulching that improve profitability by providing earlier crops. In addition, better irrigation management allows growers to reduce costs and to maximize fertilizer management. Water and fertilizer management are linked so that better management of either can improve profits and reduce environmental pollution potential. Better irrigation management technologies such as drip irrigation and tensiometers have been demonstrated.

Activities

1. Demonstrations:

More than 150 on-farm and research center demonstrations have been conducted since 1984. These have dealt heavily with production technologies such as mulching, irrigation, transplanting, and frost

protection. During the 1980s and 90s more than 30 additional demonstrations on vegetable culture have been conducted at the Polk County Mined Lands Center.

2. Workshops and Institutes:

Have presented cultural information at many major institutes and workshops dealing with intensive vegetable production, for example the Watermelon Institute (I was responsible – with Don Maynard, for the original Watermelon Institute in 1986, a program that continues today). Additional institutes include the Tomato Institute and Pepper Institute.

3. Agent In-Service Training:

Presented information on intensive vegetable cultural practices at many agent In-service training programs, several per year. For example: 18 November, 2015. Live Oak. Drip Irrigation School. "Developing a Fertilizer Management Plan for Drip Irrigated Crops and Complying with BMP Requirements (Calculations)."

4. Seminars and Grower Meetings:

Presented information on intensive vegetable culture (mulching, transplanting, irrigation, frost protection, growth enhancement) at more than 100 grower education meetings since 1984.

5. Examples of publications:

Authored and co-authored more than 100 extension publications of various types) dealing with intensive vegetable cultural systems (see publication list above). A few EDIS examples from 2013-2015:

Hochmuth, G., S. Kostewicz, and W. Stall. 2015 (revised). Row Covers for commercial vegetable culture in Florida. Fla. Coop. Ext. Serv. Circ. 728. <http://edis.ifas.ufl.edu/CV201>.

Hochmuth, G. J., R. C. Hochmuth, and S. M. Olson. 2015. Polyethylene mulching for early vegetable production in northern Florida. Fla. Coop. Ext. Serv. Circular 805, 5pp. <http://edis.ifas.ufl.edu/CV213>.

Hochmuth, G. J., and R. C. Hochmuth. 2013. Row covers for growth enhancement. Fla. Coop. Ext. Serv. HS 716. <http://edis.ifas.ufl.edu/CV106>.

Beavers, Casey, Edward A. Hanlon, Matt Wilson, James "Bud" Cates, and George J. Hochmuth. 2015. Sand-clay mix in phosphate mine reclamation: Characteristics and land use. Florida Cooperative Extension Service fact sheet. SL 423. <http://edis.ifas.ufl.edu/ss636>

Accomplishments

Prior to 1984, only about 500 acres out of nearly 30,000 acres of watermelons in northern Florida used plastic mulch. Work done in Jefferson county, the NFREC in Quincy, and my on-farm demonstration work out of the NFREC-Suwannee Valley in Live Oak helped lead to an increase in use of intensive production practices. By 1990 more than 80% of watermelons in northern Florida use plastic mulch, transplants, or a combination. Intensive production practices have allowed growers to become more profitable through earlier crops. As of 2010 100% of the watermelon growers had adopted plastic mulch and drip irrigation in northern Florida. It is now unlikely that one would find a field of watermelon anywhere in Florida being produced without mulch and drip irrigation. Our work in Florida has led to the adoption of intensive production technologies in other states including Georgia and Alabama.

Work on frost protection of vegetables has increased the use of row cover technology from zero acres in 1984 to over 3000 acres today. For example, row cover protection of vegetables in Palm Beach county in 1989 amounted to almost 2000 acres and was the difference between total loss to freezing temperature and no crop loss. It is estimated that pepper crop value more than doubled that winter due to row cover technology. Frost protection with row covers continues today with the technology also transferred to ornamental nurseries, saving considerable ground water which used to be sprayed over crops during a freeze.

C. Commercial Greenhouse Vegetable Production

Situation

Specialty horticultural crops sometimes command higher prices and lead to better farm profitability. One specialty industry that has potential in Florida is greenhouse vegetables. Florida has suitable climate and is close to markets for greenhouse crops such as tomato, cucumber, and lettuce. Increasing greenhouse

vegetable production could provide more diversity in the commercial vegetable industry and provide production opportunities for more small farmers who lack land. Another challenge facing the Florida vegetable industry is the loss of methyl bromide (a soil fumigant), and greenhouse soilless cultural systems could be used in the field to grow some of the displaced crops.

Audience: The commercial greenhouse vegetable producers of Florida.

Objectives

The objective of the greenhouse program is to improve the technologies associated with greenhouse vegetable production, making this industry more profitable and stable.

Activities

1. Demonstrations:

Since 1988, more than 100 greenhouse demonstration projects have been undertaken at the NFREC-Suwannee Valley near Live Oak, Fla. These projects deal with tomato production systems, environmental controls, and variety selection. In addition, Live Oak was part of a state-funded \$2.5 M grant to demonstrate and train WAGES individuals in horticulture.

2. Workshops and Seminar:

More than 20 institutes and workshops have been conducted since 1985 dealing with greenhouse vegetable production in Florida.

3. Agent In-Service Training:

Major Agent in-service training programs have been conducted about every three years on the subject of greenhouse vegetable production. Also, a study tour of Canadian and N. American greenhouse industries and research was made in 1988. Several in-service training tours of the Florida greenhouse industry have been carried out since 1985.

4. Seminars and Grower Meetings:

More than 50 grower education presentations have been made since 1985 dealing with greenhouse vegetable production.

5. Examples of publications:

Authored or co-authored more than 50 publications dealing with greenhouse vegetable culture over the years (some recent examples):

Hochmuth, G., and R. Hochmuth. 2015. Open-field soilless culture of vegetables. Fla. Coop. Ext. Fact sheet, SL291. <http://edis.ifas.ufl.edu/ss504>.

Hochmuth, G. J. and R. C. Hochmuth. 2015. Greenhouse manufacturers and suppliers. Fla. Coop. Ext. Serv. Fact sheet HS 1020. <http://edis.ifas.ufl.edu/HS255>.

Hochmuth, G. J. and R. C. Hochmuth. 2013. Keys to successful tomato and cucumber production in perlite media. Fla. Coop. Ext. Serv. Fact sheet HS 169. http://edis.ifas.ufl.edu/BODY_HS169.

Hochmuth, G. J. and R. C. Hochmuth. 2013. Design suggestions and greenhouse management for rockwool vegetable greenhouses in Florida. Fla. Coop. Ext. Serv. Bull. 327.

<http://edis.ifas.ufl.edu/cv195>

Hochmuth, G. J. and R. C. Hochmuth. 2015. Nutrient solution formulation for hydroponic tomatoes in Florida. Fla. Coop. Ext. Serv. Circ. 796. <http://edis.ifas.ufl.edu/cv216>

Accomplishments

During the 1980-1984 period, there were only about 15 small greenhouses producing vegetables in northern Florida and having serious challenges for successful crops. By 1992, following intensive extension work with existing growers and potential growers, there were approximately 250 houses producing tomatoes, cucumbers, and lettuce. Florida is now one of the leading greenhouse vegetable producing states in the country. My program has dealt with introducing new production technology such as the rockwool and perlite cultural systems. Our research (G. Hochmuth, Bob Hochmuth) showed that rockwool and perlite would out-perform the traditional nutrient-film technique, the standard grower practice prior to 1985. By 1992, 25% of the industry had switched to rockwool growing media. Our continued research with perlite media led to a rapid change from rockwool to perlite. By 1995, most of the industry had switched to perlite and a 1996 survey showed that the conversion to perlite was complete by the 1996 season. Today, 100% of the commercial industry uses some type of soilless media including perlite or coco-fiber media.

Fertilizer management also has played a role in the better stability of the Florida greenhouse vegetable industry. My demonstrations with nutrient solution formulation have led to the adoption of the IFAS fertilizer program in most of the greenhouses in Florida helping growers produce better crops than they were doing with European fertilizer programs. Further, the nutrient solution formulation EDIS publication is one of the most popular publications and is being used around the world.

The greenhouse vegetable handbook series has provided growers with greatly needed information on greenhouse production under Florida climate, information not available prior to 1991. It is being continually revised and updated. Until our handbook was available, most production information came from printed material from northern US and Europe. The handbook series is in great demand nationwide.

SERVICE TO PUBLIC SCHOOLS :

Provide information on hydroponic culture of plants for elementary science fair projects from all over Florida and out-of-state. I dealt with approximately 50 requests yearly from 1990-2000.

Assisted with the development of a hydroponic vegetable greenhouse at the W. J. Creel elementary school in Melbourne, FL. Greenhouse vegetable culture is used in the gifted student program to integrate teaching of math, science, biology, computers, and marketing. The program relies on our production guidelines and Extension literature for their very successful program. At the start, over 200 students were enrolled in the program.

Donated two table top hydroponic units and assisted development of hydroponic classroom units for Kanapaha Middle School, Gainesville, FL.

Judged Science Fair at Kanapaha Middle School, 1997, 1998.

Science Fair Judge, West Bend Regional Science Fair, 2005.

SERVICE TO COMMUNITY:

Member, Quincy (Florida) Rotary Club, 2003 to 2006.

MEMBERSHIP AND ACTIVITIES IN THE PROFESSION :

1. Soil Science Society of America, 1978 to present.
2. American Society of Agronomy, 1978 to present.
3. Crop Science Society of America, 1978 to 1988.
4. American Society for Horticultural Science, 1978 to present, elected **Fellow** in 2001.
5. Florida State Horticultural Society (FSHS), 1984 to present (**President, 2004-2005**).
6. Southern Region-American Society for Horticultural Science, 1985 to present.
7. Soil and Crop Science Society of Florida, 1984 to present (merged with FSHS in 2005).
8. National Agricultural Plastics Association, 1981 to 1994 (**President, 1989**). (now named American Society for Plasticulture).
9. American Society for Plasticulture, 1994 to present
10. American Greenhouse Vegetable Growers Association 1991 to 1997 (Board of Directors, 1992-1994).

ADMINISTRATIVE LEADERSHIP-DETAILS ON DUTIES AND ACCOMPLISHMENTS:

Part of my career was devoted to administration at the Department, Research and Education Center, and Experiment Station levels.

2006-2009

Associate Dean for Research and Associate Director of Florida Agricultural Experiment Station:

I was the lead Associate Dean for statewide agriculture research programs, including plant and animal agriculture. I worked with IFAS Unit Leaders and faculty to support and coordinate statewide research programs, e.g. turf, citrus, vegetables, specialty crops, row crops, livestock, IPM, pesticide management, nutrient best management practices, small farms, etc. I kept the Dean informed about the programs and assisted in making programmatic decisions, such as faculty hiring. I maintained close working relations with the Dean for Extension office to tie research with education delivery.

Examples of my major areas of program leadership:

- **Nutrient best management practices (BMPs).** My career experience in nutrient management and best management practices helped support my efforts to lead our research programs in BMPs. I was IFAS's lead contact with the Florida Department of Agriculture Office of Agricultural Water Policy for research with BMPs. I was the UF leader for the establishment of a statewide leadership team for BMP research and extension programs. The team, "**BMP Research and Extension Coordinating Council,**" (BRECC) was composed of high-level leaders from all 5 Water Management Districts (WMDs), the Florida Department of Environmental Protection (FDEP), the Florida Department of Agriculture and Consumer Services (FDACS), and IFAS Research and Extension Deans' offices. The BRECC met regularly to set priorities for research and extension programs in BMPs, determining funding, and to sponsor workshops on BMPs. I was the co-lead coordinator person for BRECC, with an individual from FDACS.
- **Bringing a wide array of stakeholders to the table.** I spent considerable time building teams of what would appear at first, as an odd team. I brought diverse individuals and groups to the table and encouraged them to work together toward common goals.
- **Statewide urban turf, sports turf, and sod programs.** I played a lead role with our turf research program statewide, working with the Department Chairs. We worked to lead for better coordination of the statewide programs, including seeking funding, reviewing accomplishments, and working with the several large turf industry commodity groups. I led a statewide turf program summit and strategic planning workshop in 2007, which led to an action plan for research, teaching, and extension. In addition it has led to a strategic plan with the industry for short-term and long-term funding for the statewide program.
- One of my most important challenges (yet something I enjoyed doing) in the turf program was to bring all of the stakeholders to the table, including regulators, public and private interests, the industry, environmentalist organizations, and municipalities and counties. The idea of a consortium of all stakeholders was new but we had great success. I was asked to speak on behalf of our science in front of environmental groups, legislative groups, and environmental protection commissions in counties who were considering regulating the fertilizer use in urban and commercial settings.
- **Specialty crops.** Florida is a 'specialty crops state' and IFAS has many programs dealing with specialty crops, including breeding, food safety, harvesting and handling, production, pest management, irrigation, food health, etc. I was our statewide leader for coordinating our response to the federal Specialty Crops Research Initiative. Included in my efforts were securing research priorities from our more than two dozen specialty crops associations and groups in the state, holding statewide video conferences on the RFA and match requirements, holding a special grant writing training workshop for proposal writing for our faculty, and staying in touch with USDA national program leaders. I participated in national workshops dealing with specialty crops.
- **Alternative energy.** I was the point person for our research in new agricultural biofuel crops and anything that comes in the form of questions about crops that can be grown for energy. I spoke to persons from all over the world interested in finding out more about energy crops and biotechnology to improve crops for energy production, and those interested in investing in our research and breeding programs.
- **Animal research programs.** Florida has significant animal industries, including, beef cattle and dairy. I was the lead associate dean for those programs. Through my experience at the North Florida REC, I gained a lot of knowledge about the industries and the leadership, particularly the beef cattle industry. A special emphasis was placed on feed conversion efficiency for which I

secured more than \$1M of federal and state funding for a brand new research facility at the North Florida Research and Education Center.

- **State and federal research funding for citrus.** With the specter of citrus greening in this state, there has been a dramatic increase in research funding to find a cure. I oversaw two large sums of funding from the state and from USDA for research on these diseases. Working with the Citrus industry we followed an RFA and proposal review process to fund the best proposals.
- **Plant breeding programs and intellectual property.** As a plant breeder myself, I took a great deal of interest in our breeding programs across all crops-ornamental, turf, agronomic, citrus, vegetable, etc. I worked closely with our plant breeding research programs, including variety development, genetics, and biotechnology programs. I was the IFAS contact for the USDA Consortium for Plant Biotechnology Research, and worked closely with our biotechnology research programs. I worked with our Germplasm Coordinator on policies and procedures for cultivar release and IP. We commercialized our IP through an "Invitation to Negotiate" process that is based on an open bid process. We evaluated all bids and negotiated with the one who can do the best overall job in commercializing our IP following evaluation by a rating system. The bid did not automatically go to the bidder with the greatest dollar offer. They must show that they would do the best for all facets of commercialization. I led the effort to introduce a new cultivar of Satsuma mandarin into Florida for the fledgling Satsuma industry in northern Florida.
- **Statewide pesticide training, regulations, policies** at all IFAS research sites statewide and on campus. When I came to my position I initiated our current program for overseeing our pesticide policy. I wrote the new policy for all sites in the state where pesticides are used in research, and wrote the procedures for ensuring WPS training, safety, and deciding on who needs licensing. I worked very closely with the Florida Department of Agriculture and Consumer Services who approved the new policy to keep us legal. I was their first point of contact and I met with them on at least a quarterly basis. My goal was to place IFAS at a level above the basic regulations to more fully minimize our risks for problems.
- **Sponsored programs.** I worked closely with our IFAS Sponsored Programs Office on many programs. First, as a member of the Research Dean's Office we worked closely on policies, procedures, etc., to continually make the process easier for faculty. Specifically, I managed several large funds for citrus, turf, and tomato research programs. For these funds I wrote RFAs, evaluated proposals, interacted with the industries, and worked with the Sponsored Programs Office to make the process work.

I maintained close working relations with agricultural industries including participation at industry meetings and conventions, work to strengthen research funding, and led strategic planning with industries. In particular, I participated in industry and commodity association meetings and Board meetings providing the voice of IFAS at these meetings and reporting on our research programs. We have close to two dozen of these groups, and there are at least a dozen who hold regular organized meetings. This was a very important part of my job and one I enjoyed considerably.

I regularly reported research progress to agricultural industries. Several of our industries provide funds for research. It was my job to coordinate this process with receiving research priorities, sending the RFA, and working with the industries on the funding process. I initiated a process whereby we coordinated the reports and assembled them into an official report booklet. I provided a summary of the report to the annual meeting for these groups.

I supported and led statewide research planning summits and other venues to develop research priorities. When I came to the office there was no standard process for getting input from the faculty as to research needs and priorities. We held several workshops and summits on several commodities and topical areas, including BMPs, agricultural wastes, turf, forages, etc.

I fostered statewide research teams to address emerging problems and to address statewide and national research problems. I spent considerable time fostering research teams to come together to address research issues and put together proposals. One of my most important functions was to help faculty research teams locate funds for their research. I worked to develop new approaches to mobilizing

research expertise for solving problems in transparent, team-oriented fashion, in an increasingly fast-paced world.

I worked with industries and potential donors to increase support for the research programs. For example I worked on two significant approaches for funding our turf program. One was a consortium approach to gain buy-in from various segments from the turf and allied industries. This approach provided funding for specifically identified projects of the consortium. A second effort was building a large endowment for long-term funding. We developed the documents, set targets, and had identified potential donors, by the time I left the Dean's office in 2009.

I participated on, and led regional and national committees and boards dealing with Experiment Station research programs. I was a BOD member for the Southern Rural Development Center. I was the research advisor for the SERA-25 Turf regional project. I helped develop an NRSP dealing with Specialty Crops Regulatory Assistance. I was a member of the National Vegetable Crops Initiative. I was one of our contacts for the National Agricultural Biotechnology Council.

General duties as Associate Dean. I also performed general duties including serving on various committees, representing the Dean at various functions, participating in CSREES departmental reviews, and dealing with the tenure and promotion process, among many other duties.

March, 1999 to June 2006

Center Director, North Florida Research and Education Center (NFREC). The Center is a major research and education center located 20 miles west of Tallahassee, Florida on the Florida panhandle.

The mission of UF/IFAS NFREC is: to develop and deliver technologies and information to meet the needs of the agricultural and natural resources industries and rural communities of northern Florida, the state, and the region. My position provided the leadership and support for the many diverse programs of NFREC including research, teaching, and extension. By 2006, this involved 24 faculty and 60 USPS/TEAMS support staff located at three units, Quincy, Marianna, and Live Oak, that made up NFREC. Specifically, my duties included:

- Faculty recruitment, hiring, support, mentoring, and guidance
- Budget management, including development and strengthening of Center program funding and endowments
- Strategic planning for R, T, and E program development and coordination
- Develop, improve, and manage Center facilities in support of faculty programs
- Liaison with IFAS Department Chairs and IFAS administration
- Liaison with District Extension Directors, especially in Northwest and Northeastern Extension districts and support for multi-county agents located at the Center
- Promote the Center and UF-IFAS with all stakeholders, legislature, governmental agencies, and the public

In 1999 the Center was comprised of 4 units (Monticello, Quincy, Marianna, and Chipley). Live Oak was merged with NFREC in 2000. In 2001, Monticello was vacated and turned over North Florida Community College and the Green Industries Institute. In 2000, Chipley was closed and the beef cattle programs moved to Marianna. NFREC in 2006 consisted of Live Oak, Quincy, and Marianna. In 2001, former Governor Chiles' "hunting camp" Jubilee was placed under NFREC administration. For all units the Center Director manages Center programs and resources, including faculty, budget, land, facilities, and support staff. I worked with faculty and Chairs from 8 Departments and the School of Forest Resources and Conservation. Nearly all metrics of scholarship have increased at NFREC while I was Director, including a doubling of grant funding to nearly \$6 million. NFREC has continued to grow under leadership in place since I left in 2006.

Some Specific Leadership Accomplishments at NFREC While I was Center Director

Center Programs:

Research

Fostered the strengthening of Center programs statewide, nationally, and internationally. For example, supported the national effort on Asian soybean rust being carried out at NFREC, and foster more interaction with the climatology program at FSU.

Ensuring faculty members have strong, active research programs with active CRIS projects

Actively seek outside state, federal, and private funds for Center faculty and programs.

Have led the effort to secure state, federal, and private funds to build the new beef cattle feed efficiency facility at NFREC Marianna, a total project of \$2.5M.

Work with Department Chairs to look for new research needs, such as wildlife ecology with the Healthy Forests Initiative in 2005.

I wrote a "Centers of Emphasis" document for the Center in 2002, outlining the current and projected areas where we have or need core strength and excellence in program delivery. This document was the basis for a Center strategic planning retreat held in November 2004.

Worked to encourage and foster interdisciplinary team work among faculty members, for example the tomato thrips and tomato spotted wilt team, and the beef cattle/forage team.

Worked with faculty to regularly seek advice for improving Center support for research.

Since 1999, total extramural funding for programs had increased from \$2.5M in 1999, to over \$4.5M in 2001, to over \$5M in 2003. Faculty members were involved in \$5.9M extramural funding in 2005.

Teaching

We increased the number of faculty routinely chairing graduate student committees. I provided matching funds for 50% of the unit's half of the assistantship not covered by the Deans match.

The number of graduate students for which NFREC faculty either chair or participate as a committee member has increased 30% each of the years I was Director. Faculty at NFREC worked with more than 40 graduate students each year.

I encouraged faculty members to participate in teaching on campus, by guest lecturing or team teaching, etc.

I encouraged and helped fund student interns at the Center.

Extension

Worked closely with District Extension Directors and with County Directors to foster more Center/County program interactions. For example, all field day presentations involved teaching by teams of Center faculty with County faculty.

Expanded the open house concept to include a wider array of programs including Natural Resources and Family, Youth, and Consumer Sciences.

Worked with faculty to increase Extension output in extension publications, demonstrations, grant support, and impact measurement.

Met regularly with the Suwannee River Partnership supporting their mission to institute BMPs for nitrate to reduce nitrates in the springs and the river.

Faculty positions

One of the most important duties of the unit leader is successfully recruiting faculty positions.

Created new Florida FIRST position in forestry focusing on private landowners and hired new faculty member in this position.

Filled a peanut breeding position that transitioned with the incumbent.

Hired two new Animal Sciences faculty in beef cattle, one in beef cattle genetics and another in beef/forage systems and nutrition.

Redescribed a vacant faculty to the area of woody nursery production and management and filled this position in 2004.

Filled a vacant position with new soil and water faculty member.

Hired a new position in WEC as part of the Healthy Forests Initiative.

General programs

Led a Center Strategic Planning process in November, 2004.
Encouraged faculty to increase our success rate in grant funding for programs. Several faculty each year win major honors and awards, such as the USDA Honors Award.
Participated in several discussions with neighboring states about multi-state programs.
Instituted a mid-year progress meeting with each faculty member to provide a time for review of the annual progress and to help the faculty member solve problems and address issues in the program.
Appointed mentoring committees for all new Assistant Professors at the Center to help guide them toward tenure and promotion. We also had a Center T & P Advisory Committee.
Actively worked with Center stakeholder advisory committees.
Actively worked to secure gifts and endowments for the Center.

Grants in support of Center programs

I worked with various agencies, legislators, faculty groups, state legislators, and federal legislators to obtain the funds described below for the Center:
Worked with state Senator Pat Thomas in 1999 to secure \$1.35M additional funds for the new office/lab building and equipment for NFREC.
Worked with the local State Representative to secure special legislative funding (\$150,000 in 2000) for equipment for the beef and forage programs at Marianna, and \$250,000 in 2005 for the feed efficiency building.
Led the effort to secure **Federal Special Research** Grant funds (\$230,000 in 2002-2003, \$223,000 in 2003-2004, \$290,000 in 2004-2005, and \$400,000 in 2005-2006 federal budgets) for the development of the Beef Cattle Feed Efficiency program at NFREC-Marianna. For this, I worked with U.S. Congressman Allen Boyd.

Center Outreach

I actively worked with all stakeholder groups by participating in their monthly or annual meetings, or any other chance I get or create. I considered this a very important part of my job.
We held legislative field days and tours to educate legislators and staff/aides about IFAS.
Worked with the faculty to develop field days and twilight grower meetings.
Set aside road-frontage land for Center Demonstration gardens.
Hired a Center Media Specialist to promote faculty programs and success stories of the Center. Worked with media specialist to develop a new Center newsletter to provide research and extension updates for the county faculty. Routinely provided news items to media outlets.
Made a video of Center programs, and several new table-top displays of Center programs.
Began a Center electronic newsletter in to update extension agents on research results.
Regularly gave presentations about Center programs to civic groups, industry groups, and others.
Began, in 2004, the NFREC Hall of Fame Award for a stakeholder who has gone above and beyond in helping the Center deliver programs.

Center Facilities

Oversaw the construction of the new facilities at NFREC-Quincy from November, 2000 to January 2002, when we moved into the new building.
Worked with State Senator Pat Thomas to secure an additional \$550,000 in 2000 and \$800,000 in 2001 for the Center. These extra funds were used for additional farm facilities, greenhouse, nursery area, and research equipment.
Added a new building in 2004 (approx. \$150,000) for plant drying and processing of research samples.
Demolished 30 old buildings and structures at NFREC since 2000 to make room for new programs, including the planting of magnolias in the ornamental Hort. program.
Oversaw the completion of the new lab/office facility at Marianna in and the movement of personnel into the new building.
Oversaw the completion of the new 1000-acre beef cattle research and extension ranch at Marianna in 1999.

Obtained special state legislative funding (\$250,000 over 2000-2001) for research equipment, greenhouse, equipment storage, total irrigation system retrofitting, and building construction at NFREC-Marianna.

Used state appropriated funds and federal special research grants to develop the beef cattle feed efficiency program, including a 120 by 300 ft state-of-the-art computer controlled feeding facility, total project was \$2.5M upon completion.

A new equipment storage/shop facility (approx. \$150,000) was completed in 2005.

Renovated the office facility at Live Oak and upgraded the building.

Added tobacco processing building in 2001, and a new pesticide mix/load facility in 2003.

Added new computer-controlled center pivot system in 2006 for irrigation BMP demonstration work.

Center Budget

Budget to adequately fund Center operations and programs was a constant challenge, especially in times of budget constraints and cuts.

I worked with the faculty to encourage and foster more extramural funding for their programs, and we increased grant funding 20 to 25% each year. I spent considerable effort in supporting faculty in seeking funds for their programs and in working on their behalf to find funds.

I worked with the local legislators to obtain special legislated funds when possible. Since 1999, I obtained more than **\$3.0 million** in extramural funding that went into construction, research equipment, and program support. This includes earmarked funds from the state legislature, and from work with the beef cattle faculty and the U.S. Congressman to obtain **\$1,140,000** in federal funding for the beef cattle programs.

I continued to be an advocate for faculty teams to come together to apply for federal funding, e.g., nursery, organic systems, beef feed efficiency, soybean rust, etc.

Encouraged the development of a cattle donation program for the beef cattle faculty programs.

Have obtained several endowments for Center research and graduate student programs.

1997-2000

Center Director (Acting), Suwannee Valley Research and Education Center (SVREC)

Live Oak is a 320-acre Unit of the Institute of Food and Agricultural Sciences, located in Live Oak, Florida. As Center Director, I was responsible for total center operations, including facilities, personnel, programs, and budget. This Center is one of the statewide Research and Education Centers and has responsibility largely as a research/demonstration facility for small farms and alternative crops and for work on nutrient management and environmental issues. The NFREC-SV housed the statewide Livestock Waste Testing Laboratory facility (since moved to Gainesville). The Center houses multi-county Extension agents (who report to the NE District Extension Director), one in small farms and another in marketing/agribusiness development. The Center is staffed by five full-time career-service personnel and numerous grant-funded research and extension positions for a yearly average of 10 total support staff. In 1998, we completed more than \$60,000 in renovations and updating of facilities at the Center. As Center Director, I managed Center budget, personnel, and operations, worked with Center advisory Committee to identify challenges and issues facing agriculture in northern Florida, worked with other college units to engage faculty in projects at the Center addressing needs in northern Florida, and assisted Center workers in carrying out educational programs, trade shows, and field days. In 2000, SVREC was merged with NFREC and its name was changed to NFREC-Suwannee Valley to reflect the unit's importance to the Suwannee River Valley region in the state. In 2004 a new position of Education Coordinator (who reports to the NE District Extension Director) was added to the Center to work on outreach programs in support of the Suwannee River Partnership, a group of agencies and private organizations working on nutrient management in the region.

HORTICULTURAL SCIENCES DEPARTMENTAL LEADERSHIP

1997-1999.

Assistant Chair-Horticultural Sciences Department-Campus.

As Assistant Chair for the Horticultural Sciences Department, I assisted the Chair as assigned for day-to-day departmental operations and committee leadership, including leadership for tenure and promotion. The largest assignment was my job as Administrator of the Horticultural Research Unit, the 540-acre research farm in Gainesville.

Administrator of Horticultural Research Unit. Responsible for management of personnel, facilities, and budget of the research farm. Personnel included a Research Coordinator and 7 additional full-time staff. Advised Department Chair on personnel promotions and position management. Worked with Research Coordinator to develop personnel position descriptions and job incentive programs. With Research Coordinator, maintain long-range planning effort for research farm. Worked with faculty advisory committee to work on issues and needs for the research farm. Provided training for students and new faculty on protocol and procedures for using the Horticultural Research Unit.

Chair of the Department Advisory Committee. Responsible for advising Horticultural Sciences Chairman on issues in the Horticultural Sciences Department. We advised Chair on items including career service personnel management and promotions, departmental budget needs, departmental capital equipment needs, space utilization, graduate and undergraduate instructional issues and needs, and computer facilities and equipment needs.

Chair of Departmental Tenure and Promotion Committee. This committee reviewed tenure and promotion packets for faculty in the Horticultural Sciences department, on or off-campus. We made recommendations for strengthening the packets and assist faculty in formulation of the strongest packet possible.

Other Duties. When required, I dealt with day-to-day administrative needs of the department, especially in absence of the chairman.
