Vegetarian 90-12
December 15, 1990

Contents

I. NOTES OF INTEREST

A. Vegetable Crops Calendar.

II. COMMERCIAL VEGETABLES

A. Suwannee Valley Field and Greenhouse Vegetable Growers' Shortcourse and Tradeshow.
C. Geminivirus Subcommittee ... Fall Assessment.
D. Onions and Day Length.

III. VEGETABLE GARDENING

A. Marion County Wins National 4-H Horticulture Honors.
B. Organic Council Appointed.

Note: Anyone is free to use the information in this newsletter. Whenever possible, please give credit to the authors. The purpose of trade names in this publication is solely for the purpose of providing information and does not necessarily constitute a recommendation of the product.
I. NOTES OF INTEREST

A. Vegetable Crops Calendar.

IFAS 1991 Institute for Watermelons and Other Cucurbits. Marion County Extension Auditorium, 2232 N. E. Jacksonville Rd., Ocala, FL. (Contact George Hochmuth).


March 11-15, 1991. Horticultural Sciences Course HOS 5330 "Commercial Harvesting and Postharvest Handling of Horticultural Crops." Available for 1 graduate credit or 1 Continuing Education Unit. Contact Dr. Steve Sargent for more information (904) 392-7911.

II. COMMERCIAL VEGETABLES


Greenhouse Vegetable Session-Exhibition II Building

AM Moderator: Bill Thomas, Ext. Dir., Columbia County

10:15 am WELCOME: Dr John Woeste, Florida Cooperative Extension Service, Director


10:45 am Figuring your costs of production and fine tuning for profit. Emil Belibasis, Greenhouse Grower, Wellborn, FL

11:30 am Considerations in designing floor level heating and ventilation systems, Mark Fales, American Coolair, Jacksonville, FL

NOON LUNCH

PM Moderator: Mike Sweat, Ext. Dir., Baker County

1:30 pm Tomato cultivars for North Florida greenhouses, Bob Hochmuth, Multi-County Ext. Agent, Suwannee Valley AREC.

2:00 pm Sweetpotato whitefly - new and promising biological control for the future, Dr. Lance Osborne, Entomologist, CFREC Apopka.

2:45 pm What is the future outlook for greenhouse vegetables in Florida?

Dan Brentlinger - Crop King, Medina, OH
Michael Dowgert - Agro Dynamics, East Brunswick, NJ
Tim Carpenter - Hydro-Gardens, Colorado Springs, CO
Mr. Greg Sciuol - Publix Supermarkets, Jacksonville, FL
3:30 pm Adjourn

4:00 - till dark  Openhouse at Suwannee Valley AREC Demonstration Greenhouse.

General Field Vegetable Session-Extension Conference Room

Moderator:     Jim Fletcher, Ext. Dir., Madison County

9:30 am  Frost and freeze protection in vegetables, Dr. George Hochmuth, Ext. Veg. Spec., Gainesville

10:00 am New mulches for vegetable crops, Keith Williamson, Sonoco Products Co., Terry Ochab, Little & Co., and Dennis Kutney, CDK International Corp.

10:30 am Crop budgets for mulched and drip irrigated vegetables in North Florida, Jim Fletcher, Ext. Dir., Madison County

11:00 am Irrigation management - practical considerations for drip irrigation managers, Dr. Gary Clark, Ext. Irrig. Spec., Gulf Coast AREC

11:30 am Thrips in field vegetables - a situation update, Dr. Steve Olson, Ext. Veg. Spec., North Florida AREC

11:50 am Suwannee Valley farmers’ market update, Will Brown, Agriculture Market Manager, Florida Dept. of Agriculture and Consumer Services

NOON LUNCH

Watermelon Session-Extension Conference Room

Moderator: Chris Vann, Ext. Agent, Lafayette County

1:30 pm Fertilizer and irrigation management for watermelons, Dr. George Hochmuth, Ext. Veg. Spec., Gainesville

2:00 pm Cultivar update for standard, seedless, and icebox watermelons, Dr. Don Maynard, Ext. Veg. Spec., Gulf Coast AREC

2:30 pm Selecting degradable mulches for watermelons in North Florida, Bob Hochmuth, Multi-County Ext. Agent, Suwannee Valley AREC

3:00 pm Using transplants and mulch for early watermelon yields, Dr. Steve Olson, Ext. Veg. Spec., North Florida AREC

3:30 pm Watermelon disease control update, Dr. Tom Kucharek, Ext. Plant Path., Gainesville

4:00 pm National watermelon promotion board, Karlyn Watson, Dir. of Industry Relations, NWPB, Orlando, FL

4:30 pm Adjourn

(Hochmuth, Vegetarian 90-12)

B. American Greenhouse Vegetable Growers Association: Highlights of Florida Meeting.

The American Greenhouse Vegetable Growers Association (AGVGA) met in Jacksonville, Florida on November 1-3, 1990. The program was built around a two-
day seminar and a one-day tour of commercial greenhouses in the north Florida area. Florida was chosen for the 1990 meetings because of the state’s large and expanding greenhouse vegetable industry. Individuals familiar with the American greenhouse vegetable industry agreed that Florida is emerging as a leading greenhouse vegetable state. Some highlights of the meeting were:

Representatives from De Ruiter Seeds (Jim Farley), Asgrow-(Bruinsma) Seeds (Frank Jonkman), and Canners -(Nunhems) Seeds (Gary Whiteaker) discussed some of their new varieties of greenhouse vegetables. Tomato breeding efforts are dominated by the need for Fusarium crown rot resistance. Most new tomato varieties will be non-greenshoulder.

Bill Staver from the Research Institute of Ontario, Vineland, presented results of his research on the use of bumblebees for tomato pollination. Pollination with bumblebees was reported to be as effective as mechanical vibration. Some details on bee management need to be worked out, however, results appear promising.

The sweet potato whitefly is becoming a major pest in Florida greenhouses. If left uncontrolled, tomato fruits ripen non-uniformly and are unmarketable. Lance Osborne for the University of Florida discussed his research on biological control of whitefly. Recent attempts at control with the Encarsa parasite, on a commercial scale, were not successful in reducing populations of the sweetpotato whitefly to levels at which irregular ripening is prevented. Research on other biological agents, including certain fungi appear promising.

Bacterial, fungal, and viral diseases remain serious problems in greenhouses, especially those operations in humid, subtropical production areas. Gemini and tomato spotted wilt viruses are a potential threat to many greenhouse tomato producers. Frank Killebrew, from Mississippi State University gave a very informative presentation on greenhouse vegetable diseases. Greenhouse vegetable producers are feeling an increased pinch in the area of disease control due to the lack of pesticides and an ever-changing spectrum of insect pests and diseases. Strength of the industry will be largely dependent on building resistance into varieties and on finding effective biological control agents.

Several presentations highlighted the greenhouse industry in Florida and the research and extension programs at the University of Florida dealing with greenhouse vegetables. Bob Hochmuth, Mike Sweat, and Bill Thomas, all from the University of Florida, discussed the growth of the industry in Florida and the challenges the growing industry faces. There are currently 70 acres of greenhouse vegetables in Florida, up from 55 acres in 1988. Cucumbers and tomatoes account for about 50% of the production in Florida.

Fertilizer management of Florida tomatoes was the topic of a presentation by George Hochmuth. High temperatures and high radiant energy provide challenges for Florida growers to control plant growth and produce high-quality fruits. Research at the University of Florida has produced several nutrient formulations for use under Florida conditions.

Several states are experiencing similar greenhouse production increases as Florida. Many requests come from inexperienced individuals desiring a second income or diversification of businesses. Gary Hickman from the University of California and Bob Hochmuth discussed key points and considerations that prospective growers must understand prior to investing in a greenhouse business. If a greenhouse business can be described, it would include the descriptors expensive, time consuming, task specific, and managerial dependent.

The education program development session led by Tim Carpenter of Hydrogardens in Colorado, provided a breadth of information for greenhouse vegetable growers. The greenhouse industry faces some strong challenges. Land-Grant
Universities are entering a period of potential down-sizing during which certain research and extension programs might be redirected and eliminated. Dr. Waters suggested that grower groups will need to become actively involved in supporting research and extension programs in greenhouse vegetable production. Strength of the industry in the future will depend on technological and marketing prowess.

(Hochmuth, Vegetarian 90-12)

C. Geminivirus Subcommittee ... Fall Assessment.

Convening in Bradenton in November, the Geminivirus Subcommittee assessed the general climate of the fall geminivirus incidence and research advancements. The Palmetto/Ruskin area exhibited the highest incidence of geminivirus with some fields having as much as 100% infection. Virus and whitefly incidence was low to nonexistent in southwest Florida, and on the east coast (specifically Dade county) as of this date.

Significant progress toward the identification and characterization of Florida's geminivirus strain has been made by Dr. Heibert and his post doctoral associate Dr. Ahamed Abouzid. Using the mechanically transmitted geminivirus previously isolated by Dr. Purcifull, Abouzid and Heibert were able to devise 2 probes to the circular DNA (DNA-A, DNA-B) of the virus. The virus appears to be different from any of the other geminivirus sequenced to date although the DNA-A probe does exhibit homology to Bean Golden Mosaic. The DNA-B probe will prove to be more specific in detecting the mechanically transmitted virus. Early testing of the probe on tissue exhibiting symptoms like those seen in the field showed a marked response to the DNA-A probe, but not the DNA-B probe, suggesting that at least two viruses exist. All scientists agreed that while this geminivirus can be mechanically transmitted in the lab, the likelihood of mechanical transmission in the field is very low. It remains to be seen whether or not a mixed virus infection is responsible for the variety of symptoms seen in the field.

To answer the concerns of the transplant growers, Drs. Brown (DPI) and Simone, Extension, have begun a survey to assess the incidence of geminivirus in transplant houses. Most of the questions about this phenomenon occurred in the Palmetto/Ruskin area, but the low incidence of geminivirus in southern Florida should dispel these rumors as many of the transplants in this area were shipped from the Palmetto/Ruskin area. The concern was based on the observation that symptom expression in newly transplanted fields was occurring in less than 14 days. The 14-day information was based on Dr. Schuster's research from his cage studies in the greenhouse. It was suggested that virus symptom expression may be more rapid under full sunlight, therefore the 14-day scenario might be misleading.

Dr. Scott has noticed that larger more vigorous Lycopersicon types (e.g. L. pimpinellifolium) seem to resist the virus more readily. He also stated that an Israeli line resistant to tomato yellow leaf curl appears tolerant to our complex and hopes to be including it in breeding efforts.

Dr. Agrios indicated that all grant options for funding from the USDA or the state legislature have proven unfruitful. However, the Florida Tomato Exchange funded Drs. Simone and Heibert $12,000 for work on probe development for diagnosis and identification of the geminivirus, and Drs. Schuster, Stansly and others $33,000 for geminivirus epidemiology and control. Drs. Heibert and Webb are hoping for aid from a BARD (Bilateral Agricultural Research and Development agreement) request.

Other news in this area includes: the Proceedings of the Sweetpotato Whitefly Workshop held in Homestead in February '89 are available in limited quantity from Dr. Narayanan (TREC, Homestead); a fact
sheet on Tomato Spotted Wilt Virus is presently available in limited quantity from Dr. Tom Kucharek; Dr. Scott says a variety of tomato called ‘Stevens’ developed in South Africa has good spotted wilt virus resistance and may be valuable in a breeding program for Florida; finally, look for PEST ALERT under the FAIRS Pesticide Information database for timely info on insect/disease epidemics in your area and adjacent areas (contact Drs. McGovern or Stansly at SWFREC).

(Vavrina, Vegetarian 90-12)

D. Onions and Day Length.

According to most seed catalogs, short-day onions represented by the mild Granex and Grano types are adapted to Florida and other southern growing locations. On the other hand, long-day onion varieties which are more pungent and suitable for long-term storage are grown in northern production areas. An intermediate class of onions with respect to day length is also available for areas between these extremes.

The bulbing response in onions is controlled by day length, and all onions are technically long-day with respect to bulbing response. That is, the bulbing response is triggered by increasing day length. However, certain types initiate bulbs when the day length reaches 12 to 14 hours, and are generally called ‘short-day onions’ and are generally adapted to areas south of 35° latitude. ‘Intermediate-day onions’ initiate bulbing when the day length is about 14 hours and are adapted to areas between 32° and 38° latitude.

The horticultural classification of onion types, although the nomenclature is technically incorrect, is useful in assigning various onion types to specific production areas. What would happen if a grower selected a long-day onion for production in Florida? The transplants would be set in the field at the normal time, but would not begin to initiate bulbs until the day length exceeded 14 hours. By this time top growth would be excessive and the bulbs would not reach marketable size before summer rains prevented normal maturation. So, until a better classification system is developed, we will continue to use the term short-day onion when considering types for production here.

(Maynard, Vegetarian 90-12)

III. VEGETABLE GARDENING

A. Marion County Wins National 4-H Horticulture Honors.

Once again our state winning 4-H horticulture plant identification team (once again from Marion County) has gone on to the national event and won the judging and identification contest handily. But we expect nothing less from such a strong horticultural state as Florida and a dedicated coach as Marion Co. 4-H agent Bob Renner.

To review the accomplishments of this super group, the 4-H team composed of Debbie Lane, Allesha Freimuth, Kari Boswick, and Joel Bockoras won the state contest held at Gainesville back in July during State 4-H Congress. They defeated 7 other county teams for the privilege of representing Florida at the national event.

So in late October Renner took his now well-trained team of hort-nuts to Green Bay, Wisconsin for the annual convention of the National Junior Horticultural Association. With him he also had Jeanne Fugate, winner of the State Plant Science Demonstrations. You guessed it, Jeanne is also from Marion County.

How well did this group represent Florida and our sponsor, the Florida Fruit & Vegetable Association? "Tolerably well", I'd say! Or some might say, "exceptionally well"! Not only did the 4-H horticulture judging team defeat the nation’s best, but they did so in convincing style. The highest score in the 4-H contest was posted by Kari Boswick, who had placed only third at
state. The Florida team also posted the second and fourth best scores; just about a white-wash.

Not to be outdone in her event, Jeanne Fugate was a national winner of the plant science demonstrations. She also entered the Honors Division of the Horticultural Identification and Judging Contest, and placed fourth nationally. We are proud to have such an achieving 4-Her as Jeanne, (who scored 1530 out of 1600 in her high school SAT!) involved in our horticulture program.

There’s more, you say! Yes Siree, Bob! The Grand National winner in the Young America Gardening Contest was K. C. Lorick, a member of Renner’s Marion group of outstanding 4-H super-achievers. Congratulations to all!

Don’t forget that in 1991 Florida hosts the national convention. It will be held in late October in Orlando. Will Bob Renner defend the title successfully? Be there and see.

(Stephens, Vegetarian 90-12)

B. Organic Council Appointed.

Florida’s organic gardeners are not affected directly by the new Organic Farm Bill passed recently by the Florida Legislature. It is only when a grower offers a product for sale as organic that the rules apply. However, most organic gardeners are interested in trying to practice commonly accepted and proper organic procedures.

Helping to determine the rules to follow for organic growers in Florida will be an Organic Advisory Council, appointed by Commissioner of Agriculture, Doyle Conner. The nine members appointed represent consumers, producers, retailers, handlers, and brokers, according the Florida Market Bulletin from FDACS. The appointees are: Robin Lauriault, Melrose; Alan Derting, Pineland; Dave Davidson, Altamonte Springs; Carol Wilkinson, Tallahassee; Steven Roslow, Ft. Pierce; Wade Howell, Jennings; Linda Donaldson, Mulberry; Gil Bowen, Haines City; and John King, Winter Haven.

For more information about the new Florida organic certification program, contact: Richard Gunnels, Division of Marketing, Room 428 Mayo Bldg., Florida Department of Agriculture and Consumer Services, Tallahassee, FL 32399-0800, phone: (904) 488-9682.

(Stephens, Vegetarian, 90-12)