July, 1982

Prepared by Extension Vegetable Crops Specialists

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VEA-I Multi-County

TO: VEGETABLE AND HORTICULTURE AGENTS
AND COUNTY EXTENSION DIRECTORS

FROM: W. M. Stall, Extension Vegetable Specialist

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VEGETARIAN NEWSLETTER 82-7

IN THIS ISSUE:

I. NOTES OF INTEREST
A. Membership in the American Society for Horticultural Science
B. New Publications
C. New Vegetable Crops Faculty
D. Vegetable Crops Calendar

II. PESTICIDE UPDATE

The Institute of Food and Agricultural Sciences is an Equal Employment Opportunity - Affirmative Action Employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex, or national origin. COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS, STATE OF FLORIDA, IFAS, UNIVERSITY OF FLORIDA, U.S. DEPARTMENT OF AGRICULTURE, AND BOARDS OF COUNTY COMMISSIONERS COOPERATING.
III. COMMERCIAL VEGETABLE PRODUCTION
   A. Seeing and Looking at a Modern Tomato Crop
   B. Consumption and Production Trends for Broccoli and Cauliflower in Florida
   C. Twenty-First Annual Florida Tomato Institute

IV. HARVESTING AND HANDLING
   A. Harvesting Practices for Roadside Markets

V. HOME VEGETABLE GARDENING
   A. Know Your Minor Vegetables - Scorzonera
   B. Results from the 1982 State FFA Vegetable Judging and Identification Contest

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The use 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. Membership in the American Society for Horticultural Science.

Any person, organization, or business firm interested in promoting horticultural research and education within the United States and throughout the world is eligible for membership in the American Society for Horticultural Science (ASHS). ASHS has eight membership categories designed to meet the needs of all those with an interest in horticulture from undergraduates to business organizations. The following is a partial list of the benefits of ASHS membership: publications (the Journal of the American Society for Horticultural Science, HortScience, and special publications), national and regional meetings, collegiate branch activities, recognition activities, placement service, and visual aids service. For more information about membership in the American Society for Horticultural Science write to me for a free brochure which includes a complete description of membership categories, prices, and tangible benefits.

(Sherman)

B. New Publications


(2) Vegetable Variety Trial Results in Florida for 1978-80, Florida Agricultural Experiment Station Circular S-289, edited by J. M. White is available from IFAS Publications Bldg., 440, University of Florida, Gainesville, FL 32611.

(3) 50th Anniversary, 1931-1981, WG 82-1 is available from the Leesburg Agricultural Research Center, P. O. Box 388, Leesburg, FL 32748.

(4) Cabbage Cultivar Trial, Research Report SAN 82-3 by J. M. White and J. O. Strandberg is available from the Sanford Agricultural Research & Education Center, P. O. Box 909, Sanford, FL 32771.

(Maynard)
C. New Vegetable Crops Faculty

(1) Ruben B. Beverly was appointed Assistant Professor, Vegetable Crops Nutrition at the Belle Glade AREC. Dr. Beverly is a native of Georgia and received his B.S.A. and M.S. at the University of Georgia. He recently completed the Ph.D. at the University of California, Riverside. He will conduct vegetable nutrition research on muck and sand in the Everglades Agricultural Area.

(2) Steven P. Kovach was appointed Assistant Professor and Extension Vegetable Specialist. He will be located at the Bradenton AREC and will have state-wide responsibilities for water management of vegetable crops and ornamental and agronomic responsibilities in southwest Florida. Dr. Kovach is a native of Indiana and received his B.A. from Purdue University. He completed the M.S. at Arizona State University and the Ph.D. at Virginia Polytechnic Institute and State University. He has been employed by the Research Division of Standard Fruit Co. in Hawaii and Honduras.

We welcome these outstanding individuals to the Florida Vegetable Crops Team.

(D. N. Maynard, Chairman)

D. Vegetable Crops Calendar

August 25-27: Master Gardener Program In-Service Training, Gainesville

September 16: Tomato Institute, Marco Island

(Staff)

III. COMMERCIAL VEGETABLE PRODUCTION

A. Seeing and Looking at a Modern Tomato Crop

Most of the State's tomato crop is grown on a mulched bed system and about three-fourths are grown on a stake and support system.
The "average" tomato plant grown on the mulched bed and stake system reaches a height of about 4 feet with a foliage spread of approximately two foot radius in the contained row. The average plant produces 170 leaves on its 5 stem, 11 branch frame. The average modern tomato plant weighs about 9.9 lbs green weight without the load of fruit.

Of the 170 leaves, approximately 47% are large, with a surface area averaging 118 sq in., 30% medium with a 76 sq in. average surface area and 23% are young developing leaves with about 52 sq in. The surface area of these leaves from an acre of plants, if laid out flat, would cover approximately 4 acres (164,874 sq ft)! The food manufacturing portion of the plant includes the flat portion of the leaf, the mid-rib of the leaf, the green stem and branches. The average stem diameter at the soil line is 0.8 in. and is a strong woody support for the foliage and fruit load which at first picking may weigh as much as 40 lbs (30 lbs fruit and the 10 lb mass of leaves and stem).

The pay-off of all of this elaborate green factory is, of course, the fruit. The average modern tomato variety develops 51 flower clusters each containing about 2.7 fruit per cluster. The average number of fruit actually harvested per plant is well over 100, with some cultivars averaging 125-140. Tomato breeders have been very successful in producing cultivars which have a concentration of fruit in the larger sizes. A typical distribution may be 40 or more fruit in the extra large category; 32 in large; 21 in medium; and 7 in the small size.

As tomatoes are sold by weight, the average fruit weight is very important. An extra large tomato weighs about 7.0 oz, large 5.3 oz, medium 3.6 oz and small 2.9 oz. Plant population in the Manatee-Hillsborough area in which we conducted this plant characterization study average about 1500-1800 plants to the row acre. The very wide spacing results in the larger fruit count and weight per plant.

The next step in our analysis of yield potential of tomatoes is devoted to this question: What is the difference in crop management between the average and top grower?

(Marlowe)
B. Consumption and Production Trends for Broccoli and Cauliflower in Florida

Broccoli and cauliflower have been receiving considerable attention in Florida as potential major crops. Although these crops have only been produced in small quantities in the past, recent interest indicates that Florida producers may well increase production in the coming years.

The Florida consumption and production trends for broccoli and cauliflower have been identified in a recent study. Estimates of Florida's average monthly consumption from 1970 to 1980 and the estimated monthly consumption in 1980 are shown in Table 1. In addition, the average and total Florida cauliflower shipments both within Florida and interstate are listed in Table 1. Table 2 lists the estimates of the total annual consumption of broccoli and cauliflower in Florida for the years 1970 to 1980, along with the total annual Florida cauliflower shipments both within Florida and interstate.

The results in Table 1 show the consumption pattern for the two commodities throughout the year. December is the highest consumption month for broccoli while October is the highest consumption month for cauliflower. Florida had no recorded production of broccoli in the sample period, but did register cauliflower shipments in the production period from November to April.

Table 2 shows the annual consumption pattern that has taken place from 1970 to 1980. Florida broccoli consumption has increased from 5760 thousand pounds in 1970 to 28294 thousand pounds in 1980. Florida cauliflower consumption increased from 8554 thousand pounds in 1970 to 22843 thousand pounds in 1980. These shipments of Florida cauliflower increased within Florida from 1540 thousand pounds in 1970 to 9135 thousand pounds in 1980. Florida did not have recorded interstate shipments of cauliflower until 1978 and these interstate shipments have increased to where they about equaled within Florida shipments in 1980.

The results indicate that Florida growers who are contemplating the production of broccoli and/or cauliflower should consider the implication of such production. The results indicated a potential for Florida growers to produce broccoli with a definite locational advantage to Florida consumers over other suppliers. The producers should determine their cost of production and determine whether their locational advantage allows their savings in transportation costs to offset any disadvantage they may have in production costs. Since most broccoli comes from California, a potential advantage for Florida broccoli growers does exist.
Those Florida growers who are contemplating producing cauliflower have a different set of problems. The analysis performed here indicates that Florida growers produced enough cauliflower in 1980 to satisfy the Florida consumption need from January to March. In fact, Florida is shipping cauliflower interstate during this and other periods, meaning that Florida growers must compete in the interstate market with other U.S. producers. Since most cauliflower is produced in California and the southwest, it appears Florida still has some locational advantage to eastern markets over those areas. This locational advantage is the most probable reason Florida's interstate shipments have expanded in recent years.

Table 1. Estimated Monthly Florida Consumption and Shipments of Broccoli and Cauliflower (1000 lbs).

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Table 2. Estimated Florida Annual Consumption and Shipments of Broccoli and Cauliflower (1000 lbs).

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<tr>
<th>Year</th>
<th>Broccoli Consumption</th>
<th>Cauliflower Consumption</th>
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(VanSickle)
C. Twenty-First Annual Florida Tomato Institute

The 21st Annual Florida Tomato Institute will be held on Thursday, September 16, 1982, at the Marco Beach Hotel and Villas, Marco Island, Florida. The Institute will precede the Florida Tomato Committee/Exchange meetings at the same location on September 17 and 18.

The Planning Committee has selected topics that are of interest to the total tomato industry. A preliminary program is included. The final program will be printed and mailed in August.

The Florida Tomato Committee/Exchange has established special rates with the Marco Hotel for the Institute and combined Committee-Exchange meetings. If you wish to stay at the Marco Beach Hotel and Villas, fill out the form below and mail it by August 16, to the:

Florida Tomato Committee/
Florida Tomato Exchange
P. O. Box 20635
Orlando, Florida 32814

(Stall)

FLORIDA TOMATO COMMITTEE/FLORIDA TOMATO EXCHANGE

PLEASE RESERVE: European Plan

Single Occupancy     Double Occupancy
(Rate $55.00 single and/or double)
One bedroom suite     Two bedroom suite
One bedroom lanai     Two bedroom lanai
(Rate $120.00 daily)  (Rate $185.00 daily)

ARRIVAL DATE: _______ TIME: _______ DEPARTURE DATE: _______

NAME(S): ____________________________

SPOUSE'S NAME(S): ____________________________

STREET: ____________________________

CITY: ____________________________ STATE: ___________ ZIP CODE: ___________
Preliminary Program
Florida Tomato Institute
September 16, 1982
9:30 a.m. - 3:30 p.m.
Marco Beach Hotel & Villas
Marco Island, Florida

9:00 a.m. Registration and Coffee*
(*courtesy of E. I. Du Pont De Nemours & Company)

Introductory Remarks
D. N. Maynard, Chairman, Vegetable Crops Dept., Gainesville, FL

The 1981-82 Tomato Season
Wayne Hawkins, Florida Tomato Committee/Exchange, Orlando, FL

Caribbean Basin Initiative
John Himmelberg, Barnett & Alagia, Washington, D. C.

Production and Market Forecasting for Florida Tomatoes
John Van Sickle, Food & Resource Economics Dept., Gainesville, FL

The State Wide IFAS Tomato Variety Trials
P. J. Stofella, ARC, Ft. Pierce, FL

Tomato Quality Characteristics and Evaluation
D. D. Gull, Vegetable Crops Dept., Gainesville, FL

Irrigation Water Application in South and Southwest Florida
G. A. Marlowe, Jr., Vegetable Crops Dept., Gainesville, FL

Fertilizing for Double Crop Tomatoes
P. H. Everett, ARC, Immokalee, FL

MUM Containers
M. Sherman, Vegetable Crops Dept., Gainesville, FL

Update on Insecticidal Control of Tomato Pests
Van Waddill, AREC, Homestead, FL
D. J. Schuster, AREC, Bradenton, FL

Pseudomonas corrugata
Ecology of Bacterial Leafspot on Tomatoes
J. B. Jones, AREC, Bradenton, FL

Control of Bacterial Leafspot by Copper plus EBDC
R. E. Stall, Plant Pathology Dept., Gainesville, FL

Fusarium Wilt Race III
Corynespora (Target Spot)
R. B. Volin, AREC, Homestead, FL

Fusarium Wilt-The Florida Situation
J. P. Jones, AREC, Bradenton, FL
IV. HARVESTING AND HANDLING

A. Harvesting practices for roadside markets.

Customers repeatedly report that one of the major reasons why they shop at roadside markets and other direct-sales outlets is for fresh, high quality products. Harvesting practices can have a dramatic effect on product quality. County agents can assist their roadside market managers by making them aware of the following general harvest principles which help guarantee high quality products.

1. Harvest at optimum maturity for best eating quality. Both immaturity and overmaturity cause quality problems. Immaturity increases water loss and shrivel. When harvested too immature, some fruits such as strawberries and tomatoes may never ripen satisfactorily; others such as watermelons and sweet corn may be low in sugars. When harvested overmature, most products such as beans, corn, and celery become tough. Overmature sweet corn will be low in sugars and starchy. Both immature and overmature produce are more susceptible to decay.

2. Harvest frequently. When fields are adjacent to the market, harvesting throughout the day to replace produce that has been sold will prevent quality deterioration between the harvest and sale. Fewer pickers are required to harvest continuously throughout the day.

3. When fields are not adjacent to the market, harvest during the coolest part of the day. This practice is most important for highly perishable produce, because high temperatures lead to rapid deterioration. To minimize the spread of certain diseases, harvest should not begin before the foliage has dried.

4. Keep harvested products in the shade. This simple practice will minimize wilting, sunburn damage, and prevent unnecessary heating of the produce. On a sunny, hot day, tomato fruit held in the sun for an hour can be as much as 25°F (14°C) hotter than fruit held in the shade.

5. Wash harvest containers daily. Use a chlorine solution made by mixing one teaspoon of household bleach with one gallon of water to thoroughly clean containers. This serves two purposes. First, chlorine kills decay-causing organisms on the container surface.
Secondly, washing removes sand and other trash that may puncture or injure the produce. Plastic containers’ smooth surfaces are easier to keep clean than wooden containers.

6. Handle all produce gently. Many fruits and vegetables have a natural protective surface. Careful handling helps maintain this surface and results in more attractive, better quality produce. Watermelons that have been handled roughly may appear undamaged but internal bruising may have occurred. Bruises, punctures, and other wounds increase susceptibility to decay and water loss.

7. Avoid rough roads when transporting produce from the field to the market. Many operators forget that vibration during transit can cause considerable damage to produce. Tie or wedge the load securely to help reduce damage. Grading of field roads may be worthwhile.

For more information on these and other factors which affect product quality refer to the new Vegetable Crops Fact Sheet, VC-33, Produce Handling for Roadside Markets. County extension programs can help improve produce quality in roadside markets.

(Sherman)

V. HOME VEGETABLE GARDENING

A. Know Your Minor Vegetables - Scorzonera

Scorzonera (Scorzonera hispanica L.) is also known as black salsify, black vegetable-oyster plant, serpent root, and viper’s grass. It has a long fleshy tap-root similar to salsify, but which is black in color, with white flesh.

While scorzonera is not at all popular in the U.S., it has been grown throughout Europe for many years where it is a native of Spain. The name derives from the Spanish escorzana, meaning black bark. The reference to snakes in its common names serpent root and viper’s grass comes from the Spanish word for viper-scurzo.

The scorzonera plant reaches 2 feet in height, with entire leaves similar to but wider than ordinary grass. If left to grow for the second year, it bears dandelion-like yellow flowers on stems 2 to 3 feet high. Seeds are white, smooth, very long, blunt at one end and somewhat pointed at the other.
Scorzonera is a perennial, but is grown as an annual with culture suggested about the same as for parsnips, carrots, and, of course, regular salsify.

Start the plants by sowing seeds 1/2 inch deep in the fall, winter or early spring. Space plants 2-4 inches apart in the row, and if more than one row is desired, space them 18-24 inches apart. Seeds usually germinate well for at least 2 years.

This cool season vegetable requires an optimum monthly average of 55-75° F, with a monthly maximum average of 85° F and a monthly minimum average of 45° F.

The roots will have reached edible size about 6 months after sowing of the seeds. However, if left in the soil longer than this even through the second year, they are reported to keep their culinary quality.

Boiling of the roots is necessary to remove a bitter taste, after which they may be eaten in a similar manner and with the similar oyster-like taste of salsify. Roots are used in soups, and mashed. Also, the leaves are occasionally eaten in salads.

(Stephens)

B. Results from the 1982 State FFA Vegetable Judging and Identification Contest

Forty-six FFA Chapters from throughout Florida entered teams in the 1982 State Vegetable Judging & Identification Contest held April 30, in Gainesville. The total number of points for a team was 2715. The top ten teams were:

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<td>Newberry Sr.</td>
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<td>7</td>
<td>Santa Fe Jr.</td>
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<td>8</td>
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<td>10</td>
<td>Auburndale Sr.</td>
<td>2350</td>
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High individuals (905 possible points) for the event were:

1. Scot Weeks - 850
2. Ginger Deas - 844
3. Troy Deines - 835
4. Robert Denton - 833

The 1983 Contest will again be held here in Gainesville on April 22, 1983. Make plans to attend now.

(McDonald)