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Vegetarian 83-06

June 6, 1983
I. NOTES OF INTEREST

A. Mailing List Update

State regulations require that we update newsletter mailing lists annually. A card has been attached for this purpose. If you wish to continue receiving the Vegetarian, please complete and return the card promptly. The Vegetable Crops Department reserves the right to determine who may receive this newsletter.

(Stephens)

B. New Publications

The following publications are available from the Agricultural Research and Education Center, 5007 60th Street East, Bradenton, Florida 33508:

(a) Results of a Tomato Fruit Size Study in Florida 1982-83, VEC Extension Report 83-1 by G. A. Marlowe, Jr. and J. A. Cornell.


(Stall & Maynard)
C. Vegetable Crops Calendar

(1) Homeowner Horticulture In-Service Training, June 28–30, 1983, Orlando

An inservice training conference for Extension agents and para-professionals working with home gardeners will be held June 28-30, 1983, in Orlando, University of Central Florida, Humanities and Fine Arts Building, Room 129. Contact your Extension District Director if you wish to attend.

PROGRAM

June 28 (Tuesday)

Moderator: Tim Crocker

1:00PM  Welcome - Don Maynard
1:10PM  Introductions - Jim Stephens
1:20PM  Citrus on the home grounds - Larry Jackson
2:45PM  BREAK
3:00PM  Home production of deciduous fruits - Tim Crocker
5:00PM  Adjourn session

June 29 (Wednesday)

Moderator: Steve Ryan

8:00AM - Planning home horticulture extension programs and evaluating their impact - Steve Ryan, Bill Summerhill, and Cliff Taylor
12:00Noon  
Moderator: Bob Black

1:00PM  Turfgrass maintenance in the home landscape - Charles Peacock
2:00PM  Woody ornamental plant maintenance - Tom Yeager
3:00PM  BREAK
3:15PM  Care of plants in the home - Bob Black
4:00PM  Growing annual flowers in the home landscape - Benny Tjia
5:00PM  Adjourn session
June 30 (Thursday)

Moderator: Jim Stephens

8:00AM Growing vegetables in home and community gardens - Jim Stephens

9:30AM BREAK

10:00AM Kinds and varieties of vegetables - Jim Stephens

11:00AM Panel - Special projects on gardening

Master Gardener - Ann McDonald
Urban Gardening - Mike Daniels
Community Gardening - Lowell Parrish
1890 Program - James Edwards

11:45AM Wrap-Up

12:00 Noon Adjourn conference

(Stephens)

(2) Third Annual Advanced Master Gardener Course, August 3-4, 1983, Gainesville

(McDonald)

(3) 4-H Horticulture Institute, June 13-17, 1983, Camp Cloverleaf, Lake Placid.

The first ever Florida 4-H Horticulture Institute will begin on Monday, June 13th. 4-Hers from across the State will have the chance to participate in a week's worth of excellent educational program that includes a one day field trip to the EPCOT Land Pavilion and Disney's horticulture support facilities. These members should have plenty of material to share with other county 4-Hers when they return home.

(McDonald)


The State 4-H Congress is approaching very rapidly. The two horticulture events will be taking place on Tuesday, July 26. Both events will be held here in the Horticultural
Science/Plant Pathology Building. Each District may enter a team or individual demonstration in the Horticultural Demonstration Contest, and each county may enter a 3 or 4 person team in the Horticultural Identification and Judging Contest. I encourage all of you to participate. Resource materials for training is available through this department and Editorial.

(McDonald)

(5) Greenhouse Vegetable Growers Workshop, June 21, 1983, Seminole County Agricultural Center, 4320 South Orlando Drive, Sanford.

PROGRAM

9:00 AM  Greenhouse Vegetable Production Systems  
Dr. M.B. Lazin, Horticulturist

9:35 AM  Chemical and Non-Chemical Control of Greenhouse Vegetable Diseases  
Dr. T. Kucharek, Extension Plant Pathologist

10:10 AM  Chemical and Non-Chemical Control of Greenhouse Vegetable Insects  
Dr. G. Leibee, Entomologist

10:45 AM  Heating and Cooling Greenhouses  
Bruce Barmby, Extension Agent, Multi-County

11:20 AM  Greenhouse Vegetable Management Techniques  
Dr. G.A. Marlowe, Extension Vegetable Specialist

(Stall)

II. COMMERCIAL VEGETABLE PRODUCTION

A. Irrigation Water Management—Quantity/Irrigation

The quantity of water applied/irrigation depends upon the following factors:

(1) Crop rooting depth:

The rate at which soil moisture is extracted from the soil is a function of root concentration and decreases with the depth of the rooting zone. Approximately 40% of the soil moisture is extracted from the top quarter of the root zone, 30% from the second quarter, 20% from the third quarter, and 10% from the bottom quarter.
Rooting depths for some of the vegetables are presented in Table 1. In Florida, the rooting depths listed in Table 1 may not apply in areas where the soil profile (organic or hard pans) and/or the water table depth influences the rooting depth. For example, the tomato rooting depth as listed in Table 1 is >48 inches under non-restrictive conditions. Whereas, the maximum rooting depth for tomatoes grown under the gradient-mulch system will be 18 inches when the water table is maintained at 18 inches.

(2) Level of soil moisture (soil water suction) at which an irrigation is started:

Moisture in the soil is held with a suction or tension and energy must be expended to remove the water. The soil suction with which the water is held to a soil particle depends upon the amount of water surrounding the soil particle, the smaller the amount of water the greater the suction required to extract the moisture. A common unit to measure the suction or tension with which water is held to a soil particle is the bar (1 bar is approximately equal to 14.5 psi). Soil water suction at which water should be applied for maximum yields for various vegetable crops are presented in Table 2.

Some of the soil water suction values listed in Table 2 for certain vegetable crops should not be used to schedule irrigations for crops grown on sandy soils. Due to limited available water in sandy soils, irrigation should be scheduled when soil water suction are between 0.20-3.0 bars. For sandy soils, water is readily available for plant growth in the range of 0.06-0.3 bars.

Table 1. Rooting Depths for Various Vegetablesa.

<table>
<thead>
<tr>
<th>ROOTING DEPTH CATEGORY AND ACTUAL ROOTING DEPTH (INCHES)</th>
<th>SHALLOW (18 - 24 IN.)</th>
<th>MODERATELY DEEP (36-48 IN.)</th>
<th>DEEP (MORE THAN 48 IN.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cabbage</td>
<td>Bean, bush and pole</td>
<td>Tomato</td>
<td></td>
</tr>
<tr>
<td>Celery</td>
<td>Cucumber</td>
<td>Watermelon</td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td>Pepper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lettuce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potato</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strawberries</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Soil water suctions for various vegetables at which irrigation should take place for maximum yields.\(^a\)

<table>
<thead>
<tr>
<th>CROP</th>
<th>SOIL SUCTION (BARS)(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beans (snap, lima)</td>
<td>0.75 - 2.00</td>
</tr>
<tr>
<td>Broccoli, early</td>
<td>0.45 - 0.55</td>
</tr>
<tr>
<td>Broccoli, postbud</td>
<td>0.60 - 0.70</td>
</tr>
<tr>
<td>Cabbage</td>
<td>0.60 - 0.70</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>0.35 - 0.40</td>
</tr>
<tr>
<td>Carrots</td>
<td>0.55 - 0.65</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>0.60 - 0.70</td>
</tr>
<tr>
<td>Celery</td>
<td>0.20 - 0.30</td>
</tr>
<tr>
<td>Lettuce</td>
<td>0.40 - 0.60</td>
</tr>
<tr>
<td>Onions, early</td>
<td>0.45 - 0.55</td>
</tr>
<tr>
<td>Onions, bulbing</td>
<td>0.55 - 0.65</td>
</tr>
<tr>
<td>Potatoes</td>
<td>0.30 - 0.50</td>
</tr>
<tr>
<td>Strawberries</td>
<td>0.20 - 0.30</td>
</tr>
<tr>
<td>Sweet Corn</td>
<td>0.50 - 1.00</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>0.8 - 1.5</td>
</tr>
</tbody>
</table>


\(^b\)The soil water suction values presented in the table pertain to vegetable crops grown in deep, well drained soil fertilized and managed for maximum production. A range of soil water suction values are given for each crop with the lower value being used when the evaporative demand is high and the higher value when it is low.

(Kovach)

III. VEGETABLE GARDENING

A. "Buggy Whip" Disorder in Sweet Corn

In late May of 1983, a home gardener in St. Johns County reported an entire planting of 1/2 acre of sweet corn was afflicted by a leaf-growth disorder of unusual appearance. A close look at the plot revealed the characteristic symptoms of a common yet seldom encountered non-parasitic disorder known as "buggy-whipping".

The upper plant portion, including the leaves and the tassel, were fused together to form a tube. The outer leaves had failed to unfurl, thus sticking to and trapping the inner leaves and tassel. Each plant was twisted grotesquely in its attempt to grow out of the condition.
Publications on corn maladies describe the condition and provide insight into some possible causes, all of which appear to result in similar symptoms.

Calcium deficiency - Although rarely occurring in corn, calcium deficiency described by Maynard (unpublished) Hambidge (1941), and others, indicates an inability of leaves to unfold so that the tips stick together giving a ladder-like effect.

Herbicide injury - causes "onion leaf", where leaves remain unwrapped in a tall spike. However, this condition is usually associated with other symptoms such as fasciation, brittleness, and curling of the brace roots.

Genetic furling - appears more frequently in certain inbred lines and would not likely appear in a commonly grown cultivar such as 'Golden Queen'.

Pathogenic - both bacterial stripe and crazy top cause a similar condition under certain conditions.

Fertilizer bud-burn - The disorder described in the beginning of this article has been observed May 1983 in Gainesville by Locascio. The condition resulted following the topdressing of dry fertilizer directly over the corn plants, with some of the fertilizer lodging in the whorl or bud. The injured leaves stuck together, trapping the innermost leaves and tassel.

Conclusion - several factors from time to time may injure the developing whorl of leaves so that they stick together rather than unfolding naturally. In all instances the results is the buggy-whip effect.

Solution - once the disorder is discovered, little can be done to correct it unless the plot is small and the plants are few. Home gardeners might manually unfold the leaves, allowing the tassel to escape and the plant to resume normal growth.

(Stephens)

B. Urban Gardening Harvest Fair

The Jacksonville Urban Gardening project, a federally funded program, highlighted the spring harvest season with a gala harvest fair and exhibit day on May 20. The event was held in the downtown square, providing ideal visibility to the Extension run program.
What had started out to be a bleak prospect for gardeners to have any produce to show due to the unusually prolonged cool and wet spring, ended up on a highly prolific note. Over 30 tables were chock full of good looking vegetables, many still immature to be sure, along with a lot of 'record' size biggies such as turnips and zucchinis. While the exhibit classes were open to the general gardening public, most of the garden produce was shown by the program participants. Exhibitors could enter one plate of each kind of vegetable grown, with prizes and awards being given to exhibitors with most total points scored.

In addition to the gardening exhibits, other events of interest to the fair goers were a scare crow contest, canning products contest, cow milking, bull petting, and poultry display. Also on hand were a country string band, an arts and crafts show, and a variety of activities for children.

The city of Jacksonville cooperated greatly with Extension in holding the event by providing close-in parking, access to the square, and security. It is estimated that over 3,000 visitors and participants enjoyed the harvest fair.

C. Vegetable Gardening Field Day - Tallahassee

The sixth Annual Vegetable Gardening Field Day was held May 27th at Florida A & M University. The 1890 program event was conducted jointly by Extension staff from FAMU and the University of Florida. The field day is primarily an inservice training opportunity for extension agents and aides working in such programs as the 1890 project and urban gardening.

Demonstrations were shown of new and old vegetable varieties for North Florida, a limited space garden including dwarf varieties, a mulching demonstration, and a model garden. Perhaps the most prominent demonstration was a collard variety trial which included a combination of 10 new and old varieties of this popular and nutritious Florida cooking green.

(Stephens)

D. St. Johns Garden Contest

Extension in several counties in Florida annually hold a vegetable garden contest of some sort for the gardening public or some special segment such as 4-H or garden club.
One such event held May 24, was a county wide vegetable garden contest in St. Johns County, both for adults and 4-H.

Twenty-two prized gardens which had come through the chaotic weather of the spring were visited and judged by extension personnel. By and large, gardens were in excellent shape despite the lateness of the spring. Particular excellence of quality was noted for beans, southern peas, and edible-podded peas, along with collard, beets, carrots, and onions. Tomatoes and sweet corn were only fair, but were making good recovery and growth. Almost everyone had productive squash and cucumbers galore.

Major problems starting to show up were such insects as aphids, flea beetles, corn ear worms, and cabbage worms, along with such diseases as bean rust, cabbage black rot, and tomato late blight. One particular garden had severe herbicide damage to about 1/3 of the garden due to high water washing it in from the fence line application zone.

The winning garden in the medium-size category was an entire back yard planted in containers of almost every size and description - barrels, boxes, buckets, raised beds, and novel hanging baskets.

(Stephens)

Prepared by Extension Vegetable Crops Specialists

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