Vegetarian 89-2  
February 15, 1989

Contents

I. NOTES OF INTEREST
   A. Vegetable Crops Calendar.

II. COMMERCIAL VEGETABLES
   A. Watermelon Institute.
   B. High-tech Vegetable Packaging.
   C. Vegetable Crops Library.
   E. Preliminary Pruning Trial of Spring Produced 'Solar Set' Tomatoes.

III. PESTICIDE UPDATE
   A. Bolero BGC (Thiobencarb) Section 18 on Lettuce, Endive, Escarole, and Celery.
   B. Section 18 for Diquat in Tomato and Pepper Row Middles.

IV. VEGETABLE GARDENING
   A. Keeping Tabs on Florida's Record-Size Vegetables.

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. Calendar


II. COMMERCIAL VEGETABLES

A. Watermelon Institute.

The January 1989 Watermelon Institute seemed to be a good success with about 120 attendees. I thought that level of attendance was good considering that many growers are very busy taking advantage of the weather.

I have sent a few extra Proceedings out to the major watermelon counties. If I omitted you, please let me know. We have a few copies left over.

(Hochmuth, Vegetarian 89-02)

B. High-tech Vegetable Packaging.

Two California firms are offering high-tech broccoli packs aimed at increased convenience, shelf life and decreased labor and transportation costs. Projections are to expand this packaging technology to cauliflower, carrots, lettuce, some other vegetables, and strawberries. Ice is not used in either of the technologies.

FreshCo Inc. relies on a gaseous mixture within the pack to maintain freshness and extend the shelf life. This modified-atmosphere technique utilizes a mixture of oxygen and nitrogen which is injected into each bag (probably a low concentration of oxygen and the remainder as nitrogen) and is intended to lower the respiration rate of the broccoli. This method was developed by Transfresh, a sister company of FreshCo. Another modification of this iceless package is that spears are trimmed to 4 inches instead of the more conventional 6 in., and therefore all of the product is useable. The new shipping carton contains about 12 lbs. of broccoli instead of the conventional 20 - 22 lbs. Estimates are that a trailer could hold about 1500 of the new cartons. FreshCo intends to target restaurants and the foodservice industry, nationwide.

The other firm, Fresh Western Marketing Inc. and backed by Hercules Inc., employs a breathable film to control respiration of the broccoli. The package film is composed of microporous polyethylene pasted over 10 holes in a heat-sealed plastic container, thus restricting the escape of carbon dioxide and the entrance of oxygen. Shelf life of broccoli in this pack is "about double the standard pack", according to the developers. Fresh Western/Hercules also trim broccoli that goes in the pack and ship a 12 lb. carton.

Both firms, FreshCo and Fresh Western, contend that the broccoli must be held at 34°F, continually. Herein lies the packaging success for both firms. Broccoli held constantly at 34°F respires at a minimal rate and should have a shelf life of up to 14 days, regardless of the type of package. Whether broccoli, or any other perishable vegetable, quality can best be maintained by proper selection of the vegetable, packaging to protect the product, precool to the most favorable temperature, and maintain the desired temperature during transport and merchandising. High tech modifications will be developed to assist in maintaining
quality but as yet there are no substitutes for the basic principles of proper handling.

(Gull, Vegetarian, 89-02)

B. Vegetable Crops Library.

A new vegetable book is available to add to your reference library - Vegetable Production by I. L. Nonnecke, 448 pages, 1988. $69.00. The dealer's description follows:

'Here is an up-to-date comprehensive text and reference on vegetable production in the United States and Canada for vegetable growers, handlers, and marketers.

CONTENTS: Principles of Vegetable Production; Scope of the Vegetable Industry; Classification of Vegetables; Seed Production; Soil-Fertilizer Vegetables; Environmental Modifiers Influencing Vegetable Production; Mechanizing Vegetable Production; Postharvest Vegetables; The Market Place; The Science and Technology of Vegetable Crops; Solanaceous Crops; Legumes - Pulse Crops; Bulbs and Roots; Cole Crops; Sweet Corn; Mushroom; Leafy and Petiole Crops; Cucurbits; Perennials; Herbs or Pot-Herbs; Okra; Tropicales; Glossary.'

Also three valuable books that I have in my personal library are now on sale at bargain prices due to an overstock.

Diagnosis of Mineral Disorders in Plants. Edited by J. B. D. Robinson.


PARTIAL CONTENTS: Essential and Functional Mineral Elements; Effects of Mineral Deficiencies and Excesses on Growth and Composition; Methods of Diagnosing Nutrient Disorders in Plants; Occurrence and Treatment of Mineral Disorders in the Field.


PARTIAL CONTENTS: Diagnosing Mineral Disorders by Eye; Plant Analysis and Sap Testing; Production of Illustrations; Some Observation on Trace Element Deficiencies in Vegetables; Glossary.


CONTENTS: Discusses special needs of glasshouse crops - water supply, light, fertilizer and soil, and explores in detail the following crops; cucumber; lettuce; pepper; tomato; carnation; chrysanthemum; poinsettia.

These books are available now for $10.00 each. I paid full price which was over $200 for these books and was well satisfied. All of the above are available from Chemical Publishing Co., Inc., 80 Eighth Avenue, Dept. 691, New York, NY 10011.

(Maynard, Vegetarian 89-02)

C. National Agricultural Plastics Association - Benefits to You and Your Growers.

On March 6-9, the National Agricultural Plastics Assoc. will be holding its Congress at the Orlando Hyatt Hotel in Kissimme, FL. There will be many papers and talks presented on mulch and row cover use from all over the world. On Tuesday, there will be tours to major vegetable and ornamental production areas. If you would like to learn more about the use of plastics in agriculture, plan on spending a day or so at the Congress.

A special "Growers' Day" has been set aside for Wednesday, March 8. Presentations have been selected that have special appeal to Florida growers. These include strawberry
production, use of row covers in Florida, degradable mulches in Florida, drip irrigation, fertilizer management with plastic mulch and drip irrigation, and more.

Please let your growers know about the Congress and specifically about the special "Growers' Day". A special one-day registration is available. For more information call George Hochmuth (904) 392-7912 or Carl Hoefer (904) 797-0299.

(Hochmuth, Vegetarian 89-02)

D. Preliminary Pruning Trial of Spring Produced 'Solar Set' Tomatoes.

'Solar Set' is a new cultivar of tomatoes developed by Dr. Jay Scott at the GCRC, Bradenton. It is a fresh market hybrid which sets fruit under high temperature and humidity conditions. The vine vigor is not as strong as 'Sunny' but is similar to 'Duke' and 'FTE 12'. Fruit size is good. Information on certain cultural practices such as pruning is limited. A study was conducted at the NFREC, Quincy to look at how various degrees of pruning affect yield, fruit size, and percent marketable fruit.

Soil type was an Orangeburg loamy fine sand. Amount of fertilizer used was 181-148-211 lbs N-P_2O_5-K_2O/acre. Between row spacing was 6 feet (7,260 linear feet/A) and in-row spacing was 20 inches. Production was with full-bed plastic culture. Soil was fumigated with methyl bromide/chloropicrin (67/33) at 220 lb/A. Plants were planted on March 21, 1988 and were staked and tied. Pesticide applications were applied as needed. Plants were pruned on April 11, 1988. Treatments consisted of no pruning, removing 4 suckers from bottom up (ground suckers were counted) and all suckers removed from ground to first fork (sucker below first bloom cluster). Plants were pruned only once. Four harvests were made and weights and fruit number were recorded. Design was random complete block with 4 replications (12 plants/rep).

Yields (Table 1) were decreased with increased amount of pruning. Highest yield occurred with no pruning but resulted in smallest fruit weight. The fruit size increased with heavy pruning over none. There were no differences in percent marketable fruit between none and heavy pruning. As amount of pruning increased the amount of fruit sunburned increased because of lack of foliage. In contrast to 'Solar Set', 'Sunny' had increased yields with light pruning over none but yields decreased with heavy pruning (data not presented).

Based on this preliminary trial, 'Solar Set' performed best with no pruning but fruit size was reduced. Further trials will be conducted to see if these results remain consistent.

Table 1. Effect of degree of pruning on yield, fruit weight, and percent marketable fruit of spring planted 'Solar Set'. NFREC, Quincy - 1988.

<table>
<thead>
<tr>
<th>Pruning method</th>
<th>Yield (25 lb boxes/A)</th>
<th>Fruit weight (oz)</th>
<th>Percent Marketable fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>2685 a</td>
<td>7.1 b</td>
<td>77.6 a</td>
</tr>
<tr>
<td>Light</td>
<td>2243 b</td>
<td>7.7 ab</td>
<td>73.0 ab</td>
</tr>
<tr>
<td>Heavy</td>
<td>1482 c</td>
<td>8.3 a</td>
<td>64.6 b</td>
</tr>
</tbody>
</table>

*Mean separation by Duncan's multiple-range test at P=.05.

(Olson, Vegetarian 89-02)
III. PESTICIDE UPDATE

A. Bolero 8EC (Thiobencarb)
Section 18 on lettuce, endive, escarole, and celery.

The U.S. EPA has issued a specific exemption under Section 18 of FICRA for the use of Bolero 8EC (thiobencarb) on lettuce, endive, escarole and celery grown on organic soils (muck) to control Portulaca oleracea (purslane) and Echinochloa sp (barnyardgrass). The exemption will expire August 31, 1989.

1. Celery
Bolero will be applied in a single application at a maximum rate of 8.0 lb a.i. at the time of transplanting, prior to weed emergence. A 70 day PHI is to be observed. Applications are to be using a ground sprayer with a minimum of 20 gallons/A. A maximum of 9100 acres of celery grown on soils with greater than 20% organic matter may be treated.

2. Lettuce, endive or escarole.
A maximum of 14,000 acres may be treated on soils greater than 20% organic matter. A single ground application at a rate of 6 lb ai per acre in 60-80 gallons of water at the time of direct seeding or transplanting and prior to weed emergence is authorized. A 60-day PHI is to be observed.

Have the supplemental label in hand and follow all restrictions before application.

B. Section 18 for Diquat in Tomato and Pepper Row Middles.

A specific exemption under Section 18 of FIFRA has been granted for the use of diquat dibromide (Diquat H/A) as a directed application to row middles in tomatoes and green peppers to control nightshade and parthenium.

A maximum of 2 applications at a rate of 0.5 lb a.i. per acre will be made by ground equipment. A 30 day pre harvest interval (PHI) must be observed.

The specific exemption will expire August 31, 1989.

(Stall, Vegetarian 89-02)

IV. VEGETABLE GARDENING

A. Keeping Tabs on Florida's Record-Size Vegetables.

From time to time, county agents will be asked to verify the size of some Florida-grown vegetable as to whether or not it is a state record. Until now official records have not been kept just for Florida. Of course, the Guinness Book of World Records keeps up with those grown anywhere, including Florida, but does not maintain a Florida file.

Therefore, it is my intent to initiate a mechanism for recording Florida's largest vegetables, and act as the official records keeper. But I will need the help of County Extension Agents. I have received the approval of agents at various Extension Home Horticulture Planning Conferences, so here is the procedure to be followed.

Gardeners who grow a large-size vegetable and request that it be considered for record status should inquire through the County Extension office. On their behalf, an agent would call Jim Stephens (904) 392-7916 to determine if a larger size is already on computer file. If none larger is on file, then the gardener may proceed to establish his entry as an official Florida record.

The procedure involves the completion of the Official Entry Form as discussed here. Upon verification as a record by me, I will enter the pertinent data and information about the record, including the Official Entry Form, in the computer file kept in my office at 1235 Fifield Hall.
From that point on, these files shall be deemed the Official Record and the basis for determining the merits of subsequent entries through the years.

The Official Entry Form is in two parts. Part I of the official rules outlines the procedures that must be followed in order to have a vegetable specimen officially designated as a Florida record. Part II - Agent Certification Form, officially documents the vegetable as to size and grower. It is not included in the newsletter. Copies may be obtained from me at Gainesville.

Is Your Vegetable a Florida Record?
VC Form 1989-1
Official Entry Form Part I: Rules for Submitting Entries
by James M. Stephens

Purpose: This form is to be used by county agents of the Florida Cooperative Extension Service, as a means of certification for large-size vegetables grown in the counties of Florida. Florida produced vegetables, certified by the Extension Service, may be officially entered in the computerized records kept in Gainesville by the State Extension Vegetable Specialist Jim Stephens. A file of largest-size specimens grown in the state provides a means of answering the many inquiries received annually by Extension concerning the status of a particular vegetable specimen.

Procedure:

1. Records are kept in computer file at 1235 Fifield Hall, University of Florida, Gainesville, FL 32611. Phone: (904) 392-7916.

2. For a vegetable to be entered in the Florida record file, the grower must process a claim through the Extension Agent in the Florida county in which the vegetable is grown, using the Agent Certification Form. (Copies available from J. M. Stephens.)

3. The agent must weigh or otherwise measure the specimen, and check to see that the specimen is not altered in any way which would add to its dimensions. Note: Growers are advised to delay harvest until the specimen appears fully mature. A photograph (black-white or color) must accompany the submitted record all the way to Gainesville.

4. A photograph (black-white or color) must accompany the submitted record all the way to Gainesville.

5. Agents must certify the specimen as to the correct kind, type, or variety for which the record is claimed.

6. Agent may first contact the Recording Specialist at Gainesville to determine whether or not a larger specimen is already on record. If a larger specimen is recorded, no further action is taken other than to notify the grower of such information. Specimens smaller than the existing state record-size vegetable will not be entered into the file.

7. The State Specialist, upon receiving this form properly processed, may review the claim with the submitting agent and has the option of seeing the specimen before accepting it as an official state record.

8. The State Specialist is the final authority in designating any submitted specimen as an official state record vegetable.
9. Once a vegetable specimen is duly recorded, the State Vegetable Specialist will present a Certificate through the county agent to the grower in recognition of the record.

10. State records will not be submitted to keepers of national records (usually the Guinness Book of World Records). Such admission is the responsibility of the grower.

11. Only those vegetables, kinds, types, or varieties shown on the official list will be considered for entry into the official records under the auspices of this project. The list is compiled by the State Vegetable Specialist and may be modified only by his approval. (see item 14 below).

12. The official list also includes the rules for preparing a vegetable for measurement or weighing. In most cases the specimen will be weighed. However, some vegetables, such as beans, will need to be measured (pod length).

13. All recorded largest vegetables prior to 1989 will be maintained in the files. Also, previous record-holders will be kept, after their records have been broken.

14. Vegetables: Bush bean, pole bean, lima bean, beet, cabbage, cantaloupe, carrot, cauliflower, celery, sweet corn, cucumber, eggplant, endive, lettuce, mustard, okra, onion, English pea, southern pea, bell pepper, Irish potato, radish (summer), radish (winter), spinach, squash (summer), squash (winter) and pumpkin, sweet potato, tomato, turnip, watermelon. Reminder: Get a copy of the Official Entry forms from J. M. Stephens.

(Stephens, Vegetarian 89-02)

Prepared by Extension Vegetable Crops Specialists

Dr. D. J. Cantliffe
Chairman

Dr. G. J. Hochmuth
Assoc. Professor

Dr. S. M. Olson
Assoc. Professor

Mr. J. M. Stephens
Professor

Dr. D. D. Gull
Assoc. Professor

Dr. D. N. Maynard
Professor

Dr. W. M. Stall
Professor

Dr. S. A. Sargent
Asst. Professor