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I. NOTES OF INTEREST

A. Calendar

Jan. 30, 1989. Watermelon Institute. Farm Bureau Building Auditorium. 12:00 noon to 4:00 pm. (Contact George Hochmuth, (904) 392-7912).


II. COMMERCIAL VEGETABLES

A. Record Income for Vegetables.

According to data recently released by the USDA, vegetable income increased to $9.2 billion in the U.S. in 1987. After adjusting for inflation, receipts rose for the first time since 1984. About 14% of the total farm receipts from crops came from vegetables (Table 1). This improvement over 1986 and 1985 was attributed to higher prices for some vegetables - lettuce, potatoes, and onions - and reduced receipts for crops under government programs.

Potatoes accounted for 17% of the vegetable income and tomatoes and lettuce contributed 14 and 9% respectively.

In Florida, vegetables represented just over 30% of the crop income in 1987, up from 28.3% in 1986.

In another report, details of the 1988 Florida strawberry crop are provided. Yields increased to 250 cwt/acre in 1987. On the other hand, prices were slightly lower in 1988 than in 1987. Nonetheless, record receipts of almost $74 million were received compared to just over $64 million in 1987.

(Maynard, Vegetarian 89-01)

B. Precooling Florida Sweet Corn. Part II. Slush Ice Precooling.

The first article in this series presented an overview of the principles and recommended methods for optimal precooling of sweet corn (Vegetarian 88-10). This article will describe the results of cooling tests performed in March, 1988, at a south Florida packinghouse using slush ice as the sole precooling method for sweet corn. Dr. Jeffrey K. Brecht (Vegetable Crops Dept.) and Dr. Michael T. Talbot (Agricultural Engineering Dept.) were cooperators.

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Table 1: U.S. Cash Receipts for Crops, 1987.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feed grains</td>
<td>19</td>
</tr>
<tr>
<td>Oil crops</td>
<td>16</td>
</tr>
<tr>
<td>Vegetables</td>
<td>14</td>
</tr>
<tr>
<td>Fruits &amp; nuts</td>
<td>11</td>
</tr>
<tr>
<td>Greenhouse &amp; nursery</td>
<td>9</td>
</tr>
<tr>
<td>Cotton &amp; tobacco</td>
<td>9</td>
</tr>
<tr>
<td>Food grains</td>
<td>8</td>
</tr>
<tr>
<td>Others</td>
<td>14</td>
</tr>
</tbody>
</table>

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The slush ice method fitted well into existing operations; sweet corn was field packed and transported to the packinghouse for application of slush ice. The slush ice was applied in the following manner. The ice/water slurry was pumped from a reservoir beneath the pallet through a split nozzle which injected two cartons simultaneously through the handholds. The injector was held in place until back pressure indicated that the cartons were filled with ice. The use of two nozzles permitted a pallet of 40 to 48 cartons to be injected in less than 2 minutes.

Slush icing requires the use of oversize containers to permit injection of a sufficient quantity of ice to accomplish precooling. Heavily waxed corrugated cartons were used at this packinghouse. Each carton held about 60 ears and about 25 pounds of ice.

Prior to precooling, ears were removed from selected cartons and the shanks were trimmed close to the kernels. This permitted insertion of a temperature probe about 2 inches into the center of the cut end of each ear. Cooling rates were measured using 7 ears with temperature probes placed in each of the two cartons. These cartons were then injected with slush ice and placed into a cold room at 38°F for about 3 hours.

To measure cooling rates between cartons, a single ear with a temperature probe was placed in the center of each of 15 cartons. The cartons were stacked on a pallet, injected with slush, placed in the cold room, and held overnight.

Results:

An examination of the cartons revealed generally uniform distribution of the ice around the individual ears and, therefore, fairly uniform cooling. However, if the injector was prematurely removed from a carton during the slush treatment, the cooling rate was significantly slowed due to inadequate coverage by the ice.

Fifty percent of the field heat was removed in an average of 51 minutes for the pallet; 75 percent of the field heat was removed after 170 minutes. Although the initial cooling rate was slower than either vacuum cooling or hydrocooling, the presence of the ice allowed the sweet corn to continue cooling. After 10.6 hours, 95 percent cooling was achieved. This rate is quite acceptable in order to maintain postharvest quality, assuming that the cartons are transported from the field and injected in a timely manner. It was estimated that the 25 pounds of ice injected into each carton was sufficient to provide cooling to 32°F and maintain that temperature and high relative humidity for at least 8 days of refrigerated transport at 34°F.

There are several requirements for adoption of slush ice precooling:

* A consistent supply of ice
* Use of waxed, corrugated cartons
* Uniformly packed cartons
* Avoidance of delays in transport, injection
* Thorough injection

In a later article, information will be presented related to costs of operating a slush ice precooling system.

(Sargent, Vegetarian 89-01)

C. Watermelon Referendum.

I have just received a communication from Washington that the National Watermelon Referendum will probably take place from February 6 through 21, 1989. When I receive the information and packets from Washington, I will immediately forward them to the counties. The voting by growers and handlers must
take place in the county offices. As I understand it, growers may only vote once, in one location even though they may grow in more than one county. The number of acres that each grower produces per year will also be asked for on the ballot. The grower should state his total acreage in Florida, not in one county.

If two growers are in partnership, each may vote, but must divide the acreage produced between them. In the packets the counties receive will be copies of the Proposed Rules for the Watermelon Research and Promotion Plan from the Federal Register and a short summary of the plan.

Only 48 counties in Florida will receive packets. This is due to production statistics from the census of agriculture. Each county that will receive ballots was contacted initially last summer. If agents have questions on if their county is included or need to ask any questions on the referendum, they may contact me or Tom Tichenor at the Marketing Order Admin. Branch, USDA, Washington, D.C. (202)475-3930.

(Stall, Vegetarian, 89-01)

D. Selection of Transplant Cell Size and Transplant Age for Watermelon Production.

Refer to the December Vegetarian for article on use and benefits of transplanting watermelons. In this article the effect of various cell sizes and transplant ages on yield will be discussed.

A study was initiated at the NFREC, Quincy to look at the effect of various cell sizes and transplant ages on yields of 'Charleston Grey' watermelons. Transplants were grown in expanded polystyrene flats of the inverted pyramid design (Speedling Todd planters), of the following sizes Model 100A, 150 and 200. The following table (Table 1) gives the costs and dimensions of the various sizes.

The experiment was repeated for 3 years. No differences in yields were recorded from the various cell sizes (Table 2). Transplants were grown for 3, 4, or 5 weeks from seeding in the various cell sizes. There were no significant yield differences (Table 3) from the various ages. With the largest cell size (Model 200), the 3-week-old transplants were difficult to remove because the root systems had not filled the cell and allow the media to hold together.

There were no interactions between the various cell sizes and transplant ages. The 100A may be a bit small because of the limited surface area each plant has. There is a tendency for the 100A plants to become elongated and harder to handle.

If possible when receiving plants it is best to keep them in the flats. If there is a delay in planting, plants in shipping boxes may become yellowed and elongated.

When receiving or purchasing transplants, they should be inspected carefully for insects, diseases, stunting or presence of blooms. If blooms are showing or open, the plants may be too old to perform satisfactorily. The grower should inquire as to the age of the transplants. Old transplants have a very hard time establishing a root system. The transplants should be watered in or watered as soon as possible after planting to help establish their root system.

(Olson, Vegetarian 89-01)
Table 1. Cost and Dimensions of Flats Used in Trials.

<table>
<thead>
<tr>
<th>Model</th>
<th>Cost/$/thousand</th>
<th>Width (in)</th>
<th>Depth (in)</th>
<th>Volume (cu in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100A</td>
<td>32.50</td>
<td>1.0</td>
<td>3.0</td>
<td>1.0</td>
</tr>
<tr>
<td>150</td>
<td>47.80</td>
<td>1.5</td>
<td>2.5</td>
<td>1.9</td>
</tr>
<tr>
<td>200</td>
<td>82.00</td>
<td>2.0</td>
<td>3.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

*Average costs, may vary depending upon quantity purchased and does not include seed costs.

Table 2. Effect of Various Flat Sizes on Watermelon Yields.

<table>
<thead>
<tr>
<th>Model</th>
<th>Total Yields (cwt/acre) 1984</th>
<th>Total Yields (cwt/acre) 1985</th>
<th>Total Yields (cwt/acre) 1986</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>100A</td>
<td>370</td>
<td>575</td>
<td>377</td>
<td>441</td>
</tr>
<tr>
<td>150</td>
<td>349</td>
<td>604</td>
<td>375</td>
<td>443</td>
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<tr>
<td>200</td>
<td>392</td>
<td>631</td>
<td>366</td>
<td>463</td>
</tr>
</tbody>
</table>

Significance: NS NS NS

Table 3. Effect of Transplant Age on Watermelon Yields.

<table>
<thead>
<tr>
<th>Transplant Age (weeks from seeding)</th>
<th>Total Yield (cwt/acre) 1984</th>
<th>Total Yield (cwt/acre) 1985</th>
<th>Total Yield (cwt/acre) 1986</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>353</td>
<td>593</td>
<td>385</td>
<td>444</td>
</tr>
<tr>
<td>4</td>
<td>370</td>
<td>605</td>
<td>354</td>
<td>443</td>
</tr>
<tr>
<td>5</td>
<td>388</td>
<td>612</td>
<td>380</td>
<td>460</td>
</tr>
</tbody>
</table>

Significance: NS NS NS

III. PESTICIDE UPDATE

A. Changes in Maneb Labelling and Availability.

Since the patent of manebo as a fungicide in 1950, effective plant disease control of foliar diseases with chemicals became a reliable ally of the farmer. The popularity of manebo grew on major vegetables as well as minor vegetables. Manebo fungicides were labelled for use on more vegetables than any other organic fungicide type. The wide labelling of manebo continued for many years and rarely were complaints heard that this broad spectrum fungicide did not perform as expected. The broad labelling of manebo lulled us to sleep on any labelling issue because we had most vegetables "covered." However, as we sought new crops to be added to the manebo label after 1970, difficulties were encountered. A series of hurdles such as EPA, IR-4, corporate belt tightening, adverse press releases, and others had to be overcome for each and every new registration on new or old labels.

Over time, not only did new registrations slow down, old registrations were cancelled or voluntarily withdrawn. By 1977, RPAR's were issued for numerous agricultural chemicals including manebo and other EBCD (ethylene bis
dithiocarbamate) fungicides. EPA said that the possible formation of ethylenethiourea (ETU) presented risk as a carcinogen. The RPAR was satisfied in favor of the EBDC fungicides but new tactics were taken to withhold new registration for the EBDC's. With each new request by the EPA for the manufacturers to present new evidence that the product was "safe," additional costs (in the millions) had to be incurred to keep a product in the market place. This author heard that the cost to keep maneb on the market was $8,000,000. At one time four or five companies were to have shared the "cost." "Nuts," said some, and now as this author understands the situation, the current licensing of maneb is in ONE company. Pennwalt Corporation now markets maneb. Manex, Dithane M-22, Dithane M-22 Special, Manzate, Manzate D, Stoller Maneb, and other maneb formulations are no longer available except what is in the trade at this time. THE ONLY MANEB FORMULATIONS THAT ARE BEING MANUFACTURED ARE PENNWALT'S MANEB 80 AND MANEB PLUS ZINC F-4. THE NEW "MANEX 11" SOLD BY GRIFFIN CORPORATION IS A FLOWABLE MANCOZEB PRODUCT (equivalent to Dithane M-45 and Manzate 200).

As of October 3, 1988, a registration standard for maneb has been issued by the EPA. Of interest in their fact sheet on the registration standard for maneb, they refer to Dithane M-22 and Manzate as the "Principal Trade Names." Those two products are of historical interest only. Regardless, the MANEB 80 and MANEB PLUS ZINC F-4 products are the remains of the maneb fungicides.

Pennwalt's two maneb formulations are labelled for use on 14 and 10 vegetable crops, respectively, for Maneb Plus Zinc F-4 and Maneb 80. New chemical listings for vegetable fungicides are being printed at this time. At one time, maneb fungicides were labelled for use on 26 or more vegetables.

The elimination of crops such as carrots and celery from maneb labels is not currently a major problem because other fungicides can fill the void. However, the deletion of some crops such as collards, turnips, and mustards from the maneb label creates a void with the exception of a few inorganic copper and sulfur labels. Soon we will be like the nematologists who have learned to study nematodes with high population levels only.

In discussions with Pennwalt personnel, we are anticipating them to send a SLN (24-C) that will petition for the use of maneb on turnips, mustards, and collards. At the present time, we do not have adequate controls for downy mildew and Alternaria leaf spots in these crops. One final bit of information, the two maneb formulations currently available from the one company is all we have for tank mixing with copper fungicides for bacterial spot in pepper. Either mancozeb or maneb can be used on tomatoes, but only maneb is labelled for peppers. I have been told more times than I care to hear about that at some point in time a rollover of crops from maneb label to the mancozeb labels will solve the problem. I look forward to that occurrence but the way things are going, the life expectancy of maneb in the marketplace may be about 1/2 of a normal life expectancy of the ultimate beneficiary, the consumer.

(Kucharek, Vegetarian 89-01)

B. Enquick Herbicide Receives 24(C) Label for Tomato, Pepper and Eggplant Row Middles.

Enquick herbicide (Monocarbamide Dihydrogensulfate) has received a special local needs 24(c) label for use with Gramoxone Super in tomato, pepper and eggplant* row middles.

Enquick is a desiccant produced
by Unocal Chemicals Division. The product is to be used as a directed shielded spray at 3 to 5 gallons of Enquick in 20 to 50 gallons total spray per treated acre. Use a non-ionic surfactant at a rate of 1-2 pts per 100 gallons of spray mix.

Enquick is a contact herbicide-desiccant which destroys plant tissue by disrupting cell membrane structures. Thorough coverage is critical, Enquick has no systemic action. Note: Enquick is severely corrosive to nylon; mildly corrosive to mild steel, aluminum, brass, leather or natural rubber. Non-nylon plastic and 316-L stainless steel are recommended for application equipment. Diluted Enquick is more corrosive to steel than the concentrate.

*Note: Gramoxone does not have an eggplant row middle label.

(Stall, Vegetarian, 89-01)

IV. VEGETABLE GARDENING

A. Florida's Participation at National Junior Horticultural Assoc. (NJHA) Conventions.

For over 30 years, Florida 4-H'ers have represented our state well in various horticultural competitive events at the NJHA convention, and 1988 was no exception. As has been the case for the past decade with the exception of two years (St. Johns County in 1984, and Leon County, 1987), the county doing the honors in Horticulture Judging and Identification was Marion.

In 1988, the Marion County 4-H team placed 1st in the nation in the 4-H Division. Claudia Craver had the top 4-H score, followed by team-mates Yogi Williams (3rd), Kim Charles (5th), and Danny Lane (7th). Congratulations to this fine team, coached by Marion County 4-H Agent Bob Renner, for an outstanding showing at Chicago in October, 1988.

For those not familiar with the National Junior Horticultural Association (NJHA), it is an organization for America's youth interested in horticulture. Leadership is provided by an NJHA Executive Committee, an NJHA Foundation Board of Officers (National Chairman is Jack Leaver, Fremont, MI, whose daughter Jan Hoffman is Executive Secretary), and State Program Leaders, one from each state. Florida's current (1989) leader is Bob Renner, Marion County 4-H Agent.

Financing comes from contributions from corporations, associations, businesses, and individuals. Most of the membership results from participation in ongoing state youth programs such as 4-H and FFA, although some states have
independent NJHA organizations (Florida does not).

According to NJHA Historian Wibb Justl of Worthinton, Ohio, the activities of NJHA began in 1935, but it was not until 1939 that the organization officially began. Thus, 1989 will mark the 50th year, which will be celebrated in Hunt Valley, Maryland, at the next convention. In the beginning the organization was called the National Junior Vegetable Grower Association (NJVGA) until its becoming NJHA in 1965.

Florida will be hosting the NJHA Convention in October, 1991, at Altamonte Springs (Orlando). This will be the third time we have hosted the convention. It was my privilege to have helped host the 1962 and 1971 (both at Miami Beach) conventions.

Here is a brief history of the past conventions since my first encounter in 1962. Florida had participated earlier at Detroit and Springfield.

<table>
<thead>
<tr>
<th>Year</th>
<th>Place</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>1962</td>
<td>Miami Beach</td>
<td>St. Johns</td>
</tr>
<tr>
<td>1963</td>
<td>Pittsburgh</td>
<td>St. Johns</td>
</tr>
<tr>
<td>1964</td>
<td>New Orleans</td>
<td>St. Johns</td>
</tr>
<tr>
<td>1965</td>
<td>Cincinnati</td>
<td>St. Johns</td>
</tr>
<tr>
<td>1966</td>
<td>St. Louis</td>
<td>St. Johns</td>
</tr>
<tr>
<td>1967</td>
<td>New York</td>
<td>St. Johns</td>
</tr>
<tr>
<td>1968</td>
<td>Atlanta</td>
<td>St. Johns</td>
</tr>
</tbody>
</table>

1969 Indianapolis   Marion
1970 Denver         St. Johns
1971 Miami Beach    St. Johns
1972 Columbus       St. Johns
1973 Oklahoma City  St. Johns
1974 Chevy Chase    St. Johns
1975 Biloxi         St. Johns
1976 King of Prussia Polk
1977 Winston-Salem  Marion
1978 Cleveland      Marion
1979 St. Louis       Marion
1980 Atlanta        Marion
1981 Colorado       Marion
1982 Niagra          Marion
1983 Tulsa          Marion
1984 Grand Rapids   St. Johns
1985 Lexington      Marion
1986 Raleigh        Marion
1987 Indianapolis   Leon
1988 Chicago        Marion
1989 Hunt Valley ?

During the early years, at least through 1973, Florida 4-H'ers were joined by FFA teams from Florida. In all years, a state winning 4H horticultural demonstration team/individual has accompanied the judging/identification team. Although flowers, ornamentals, and fruits were included when the organization became NJHA in 1965, we in Florida kept the vegetable theme until 1975. That marked the end of the reign of St. Johns County which had won in every year since 1962, with the exception of 1969 when Marion County won (coached by Jimmy Geisson).

(Stephens, Vegetarian 89-01)

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