



Vegetable Crops Department
VEGETARIAN

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TO: COUNTY AGRICULTURAL AGENTS

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1. Systems for Controlled Atmosphere Storage of Produce.

Attached is a mimeo report prepared by Mr. J. M. Stephens which gives some information on systems for controlled atmosphere storage of fresh produce. This aspect of produce handling has generated considerable interest in the past two or three years among handlers of fresh vegetables even though research on this subject is limited. Additional copies of this report are available from this office.

2. Fresh Produce Buyer's School.

In early April, the University of Florida conducted a six-day short course for 52 fresh produce buyers who are members of the Super Market Institute. This group represented many millions of dollars of buying potential for Florida's citrus and vegetables. For example, one of these men was in charge of fresh produce purchases for 485 stores owned by his company.

We believe that anybody interested in the vegetable industry could have learned something from this school. These include growers, shippers, transportation people and the fresh produce men who warehouse and retail our products. Many points need improvement from the field to the consumer's table. This was especially highlighted in reports by a grower and a produce buyer who spent two weeks observing and studying each others' operations.

Here are some of the more important deficiencies as pointed out during the school:

- (1) Permitting produce to overheat in the field, by delays in transit to packing house and on the platform.
- (2) Inadequate precooling caused by insufficient capacity, reducing time in cooler, etc.
- (3) Bulge packing or forcing too much produce into the container with resulting injury to produce.
- (4) Inadequate grading and limited use of grade standards.
- (5) Improper closure of boxes (pointed out as example in sweet corn).
- (6) Improper loading for long distance transit.
- (7) Over-jarring of produce in transit.
- (8) Inadequate refrigeration in transit.
- (9) Specifications often attributed to some buyers that may not be best or even necessary (Example--Shanks and flags on corn).
- (10) Rejection of produce at terminals.
- (11) Price differential between F.O.B. to grower and that charged the consumer.
- (12) A general lack of communication between and among all segments of the fresh produce industry.

Please note that these points are directed to growers, handlers, precoolers, middlemen, transporters, wholesalers, retailers, etc. Most people involved seem to agree that remedies for most of the above deficiencies would be fairly simple, but implementation may be more difficult.

3. Quality in Cantaloupes.

Quality in cantaloupes is largely determined by sweetness. Certainly, other factors such as aroma, color, texture, etc., are important, but sweetness is by far the most important factor considered by the consumer.

Cantaloupe growers know that quality cantaloupes can be grown in Florida for they have done it themselves many times. On occasions, however, their cantaloupes fail to develop sweetness. These occasions have lent some support to the "hearsay" that we are unable to produce quality cantaloupes in Florida. This is not true.

An understanding of why cantaloupes sometimes fail to sweeten up would do much to counteract this type of thinking. Having worked with breeding, variety testing, field demonstrations and commercial growing, we have made many observations along these lines. From all this work we have developed some ideas on factors affecting sweetness in cantaloupes--some of these are strictly observations. Nevertheless, here they are.

- (1) Sweetness is controlled to a certain extent by genetics. (Under Florida's sub-tropical conditions, a variety with Smith's Perfect blood is apt to sweeten up better than one without it.)
- (2) Heavy rainfall near or at harvest time lowers the sugar content of all cantaloupes.

(3) Sugar is the last quality factor manufactured by the plant. (That is, a cantaloupe may have good texture, aroma, color, netting, etc., and yet taste flat because it is not sweet.)

(4) A cantaloupe must reach a fair degree of maturity (at least one-quarter to half-slip or more, or be free of slick surface on upper side which is exposed to direct sun) or it will not be very sweet.

(5) A cantaloupe will not develop much sweetness generally in the fall of the year in Florida. Cantaloupes apparently require the longer day and warmth of the spring instead of the opposite conditions encountered in the fall.

(6) Honeybees are necessary for good pollination which in turn is necessary for best shape and, to a certain degree, for size and sweetness also.

(7) "Regular" cantaloupes and the honey dew types are quite similar in many ways. They are different in that a cantaloupe is self-ripening, but a honey dew type generally needs assistance from ethylene gas.

4. Miscellaneous Items.

A. New Vegetable Varieties from Clemson and USDA.

(1) Cucumbers - Gemini and Cherokee are hybrids released by Dr. Barnes at the Clemson Station located at Charleston, South Carolina. Cherokee is reported to have resistance to downy and powdery mildew, anthracnose and angular leaf spot. Gemini has resistance to scab and cucumber mosaic. It also has moderate resistance to the other four diseases as well. Some seed for planting in 1967 will be available from seed companies.

(2) Cantaloupe - Gulfstream is a variety released by the USDA. This was tested at experiment stations and in grower fields in Florida under the code number USDA 63-4. It looked exceptionally good in these trials. Gulfstream has resistance to downy and powdery mildew. It is similar to Hale's Best in type. Some seed for planting in the 1967-68 season should be available from seed companies.

(3) Green Bean - Bonus is a bush green bean variety released by the USDA Vegetable Breeding Laboratory at Charleston, South Carolina. Bonus was tested to a limited extent in Florida under code number B3125-X-5-2. It is a white-seeded, dual purpose variety reportedly good for fresh and processing markets alike. In Florida, it did not rate as our best fresh market type. However, it may have promise as a processing variety. Seed, in limited quantities, should be available from seed companies for fall or winter plantings in Florida.

B. New Approvals for Agricultural Chemicals.

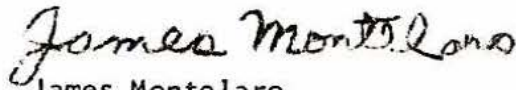
(1) Dithane M-45 - Use has been broadened on tomatoes. It now can be used at $1\frac{1}{2}$ to 3 pounds per acre, starting at seedling stage and repeating at 7-day intervals through the season. It may be used at shorter intervals for gray leaf spot. Be sure to READ THE LABEL.

(2) Paraquat - Has been approved for use as a vine killer for potatoes. The manufacturer suggests the following information for use of this material:

Use 1 to 2 pts. per acre. Use the 2 pint rate where growth is vigorous or where quick vine kill is desired or 2 applications of 1 pint when vine growth is dense. Use the 1 pint rate on maturing vines. Apply in 50 to 100 gallons water per acre with thorough coverage. Add a good sticker spreader. Do not make more than 2 applications with a minimum of 5 days between applications. Do not apply Paraquat to potatoes within 3 days before harvest. Do not pasture livestock in treated potato fields. To avoid injury to subsequent crops do not use on muck or peat soils. CAUTION NOTE: Be sure that nozzles are arranged to give complete coverage. The killing action is by contact. Unsprayed leaves will not be killed.

(3) Others - Several agricultural chemicals have received approval for use for the first time, or approval expanded to include new crops, longer use, etc. These include Polyram, Botran, Thiodan, Cygon, Dacthal, and possibly others. For more information on these pesticides READ THE LABEL.

Sincerely,



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