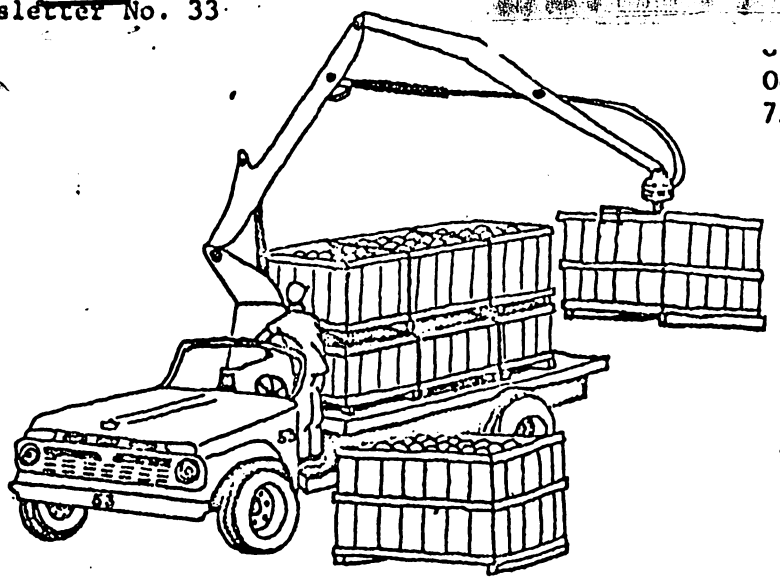
Newsletter No. 33

Citrus Station Mimeo Report CES 71-11
October 19, 1970
750-WFW-Lake Alfred, Florida 33850



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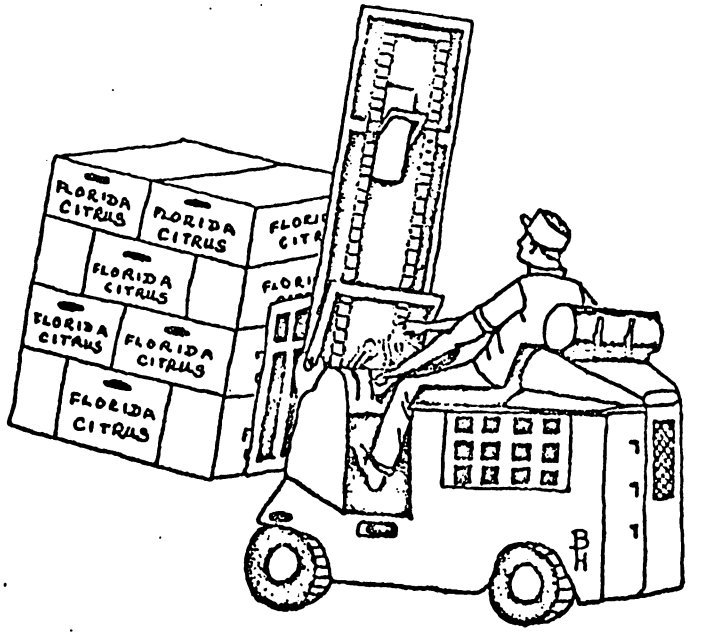
# Packinghouse Newsletter

UNIVERSITY OF FLORIDA INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

and

STATE OF FLORIDA, DEPARTMENT OF CITRUS




*Complimentary to members of the Florida Fresh Citrus Shippers Association. Others wishing to receive this newsletter may send a dozen stamped, preaddressed envelopes to the above address.

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Harvesting and Handling Section

# P A C K I N G H O U S E  N E W S L E T T E R

## LABELING OF BAGGED CITRUS FRUIT TREATED WITH FUNGICIDE(S)

Following considerable discussions on the subject, the following extracted information regarding the labeling of citrus fruit treated post-harvest with pesticide has finally been received in writing from the office of the director of field coordination of the Federal Food & Drug Administration in Washington:

1. (The law). Section 403(1) of the Food, Drug, & Cosmetic Law states that a food shall be deemed to be misbranded if it is a raw agricultural commodity which is the produce of the soil, bearing or containing a pesticide chemical applied after harvest, unless the shipping container of such commodity bears labeling which declares the presence of such chemical in or on such commodity and the common or usual name and the function of such chemical: Provided, however, that no such declaration shall be required while such commodity, having been removed from the shipping container, is being held or displayed for sale at retail out of such container in accordance with the custom of the trade.

2. (The interpretation). When individual bags are packed into master cartons for shipment, only the master carton must bear the declaration required by Section 403(1). If on the other hand, the bags are not packed into other containers, but are shipped individually, each individual bag becomes a "shipping container" which must bear the required declaration.

This means that for the 5 and 8 lb. bags of citrus which are packed in bagmasters, the name(s) and function of the fungicide(s) need appear only on the bagmaster. Loose bags shipped within the state, and all boxes, must continue to bear the required declaration.

George F. Westbrook
Chief, Bureau of Technical Control
DIVISION OF FRUIT & VEGETABLE INSPECTION

## DEGREENING--ETHYLENE RATES AND HUMIDITY CONTROL

Several people have inquired about the rates of ethylene to use in the new large pallet box degreening rooms. The following table, which will appear in the degreening bulletin now being revised, gives this information, both as bubbles/minute and for various types of flowmeters now in use. The use of this information, plus continuous ventilation and use of an analyzer to check the concentration of ethylene, will enable the operator to maintain a level of ethylene in degreening rooms between 1 and 5 parts per million. Remember--too much ethylene increases stem-end rot decay and shortens the life of the fruit without increasing the degreening rate. (An ethylene analyzer and supply of sampling tubes can be obtained for less than $100. Bill Strickland's office can supply information on supplier, catalog numbers, etc.)

Degreening--cont.

High relative humidity is necessary to maintain good fruit quality during degreening. A 1 to 2° spread between wet and dry bulb thermometers indicates that you are maintaining the recommended 92% to 96% relative humidity providing the thermometers are placed where a steady current of room air passes over them.

We advise the use of automatic temperature and humidity controls. For these, the placing of the sensing units is critical. The thermostat (for temperature) should be in the discharge air before it reaches the fruit. The humidistat (for humidity) should be in the return air on its way back to the radiator.

Steam is commonly used to maintain the humidity in degreening rooms, but it also raises the temperature. In the early part of the degreening season, outside temperatures are high and the temperature cannot be maintained consistently at 85° F or below. This is the maximum temperature allowed in degreening rooms by the addition of heat (Florida Citrus Code, Regulation 105-1.13). The exception to this regulation is that steam may be used to raise relative humidity in degreening rooms. High humidity must be maintained even though room temperatures go into the 90's. Low relative humidity will increase stem-end rind breakdown and stem-end rot decay.

Flow rates for ethylene to establish a degreening atmosphere of 1 to 5 ppm ethylene and minimum $CO_2$.[a]

| Size of room[b] | | Ethylene flow rate as | | | |
|---|---|---|---|---|---|
| Field boxes | Pallet boxes | Bubbles/ min[c] | cc or ml/ min | liters/ hour | cu ft/ hour |
| 500 | 50 | 50 | 12.5 | 0.75 | 0.025 |
| 1,000 | 100 | 100 | 25 | 1.5 | 0.05 |
| 2,000 | 200 | 200 | 50 | 3.0 | 0.1 |
| 5,000 | 500 | 500 | 125 | 7.5 | 0.25 |
| 10,000 | 1,000 | 1,000 | 250 | 15.0 | 0.5 |

[a] To be combined with continuous ventilation to keep $CO_2$ below 0.1% in the room atmosphere.

[b] Ethylene delivery should be proportional to the size of the room but not to the load in the room.

[c] Bubbles from 1/4-inch line in a standard FMC trickle unit.

W. Grierson
Citrus Experiment Station

A. A. McCornack
Florida Department of Citrus

## COORDINATION WITH INDUSTRY

One of the highlights of the annual meeting of the American Society for Horticultural Science at the Carillon Hotel in Miami Beach will be a symposium to be held after the opening session, Monday, November 2. This is sponsored by the Committee for Coordination With Industry and entitled, "A Challenge to Research to Meet the Future Needs of Industry." One of the threats to American horticulture, as seen by the CWI Committee, is that increasing specialization of both research workers and horticultural industries is proving a threat to communications between executives and business managers in horticultural industries who will be encountering ever-changing problems and the research workers who should be preparing solutions to the problems before they prove too costly.

The speakers, each of whom is well known for his role in industry or research, have been drawn from all over the United States and from every branch of horticulture. The Keynote address will be given by Dr. John Carew, Head of the Department of Horticulture at Michigan State, and well known for his work in vegetable research in the United States and in foreign aid projects abroad. The needs of industry in relation to genetics, plant breeding, and variety selection will be presented by Mr. E. Wilbur Scott of the Joseph Harris Company, Inc., seedsman from Rochester, New York. Industries future needs for research information on culture methods will be presented by a speaker from the other side of the country, Mr. Fred Heringer, a major fruit and vegetable producer and vice-president of the California Farm Bureau Federation.

Mr. Leon Miller of Duda and Sons, Oviedo, Florida, and a director of the National Produce Packaging Association, will discuss the problems to be foreseen in postharvest handling of vegetables. The equivalent picture will be presented for fruits by Mr. Ray Floate of the Michigan Fruit Canners, Inc., Benton Harbor, Michigan.

The increasingly prosperous field of ornamental floriculture will not be forgotten because the entire program is to be summed up by a noted Floriculturist and research worker, Dr. Neil W. Stuart of the USDA Plant Industry Station, Beltsville, Maryland, and a former president of the American Society for Horticultural Science.

Ample time is being scheduled for discussion; and it is hoped that attendance will include not only members of the American Society for Horticultural Science, but also representatives of the vast horticultural industries of Florida, all of whom have built their present prosperity on the findings of research and whose support, advice, and participation are going to be most essential for future horticultural research, not only in Florida, but nationally.

W. Grierson
Citrus Experiment Station

## REVISED MATURITY CHART FOR 1970-71

A revised citrus maturity chart that supplements Agricultural Extension Service, IFAS, University of Florida, Circular 315, "Quality Tests for Citrus Fruits," has been printed and made available by a commercial company. See the Available Publications list in this Newsletter.

Editor

## AVAILABLE PUBLICATIONS

Available from Harvesting & Handling Section, Citrus Experiment Station, P. O. Box 1088, Lake Alfred, Florida 33850.

"Citrus Fruit Maturity 1970-71." A chart to supplement Circular 315, "Quality Tests for Citrus Fruits" (June, 1967). This chart includes recent changes in maturity standards for Florida citrus.

"Perspectives Nouvelles Offertes Par Les Fongicides D'erivés Du Benzimidazole Dans le Traitment Des Agrumes." by E. Laville. Fruits d'Outre Mer 25(5):337-339. 1970. As "New Prospects for Treating Citrus Fruits Offered by the Benzimidazole-Derived Fungicides." Translated by W. Grierson.

"Ninth Annual Packinghouse Day Program and Abstracts." Mimeo Report CES 71-4, September 9, 1970.

"Degreening Citrus Fruits." by W. Wardowski. Citrus & Vegetable Magazine. October, 1970.

"Twenty-first Annual Citrus Processor's Meeting." Mimeo Report CES 71-7, October 8, 1970.