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Editor: W. F. Wardowski
Harvesting and Handling Section*
University of Florida
Citrus Experiment Station
P. O. Box 1088
Lake Alfred, Florida 33850

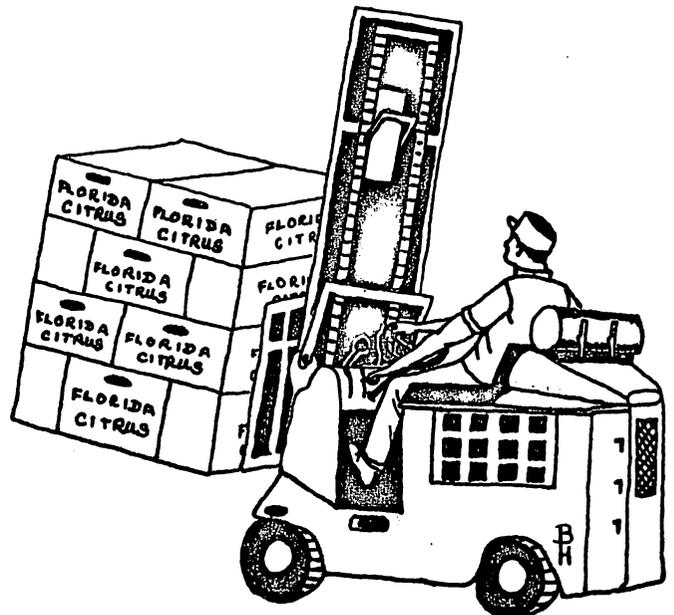
Packinghouse Newsletter

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.



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

HOLDING FRUIT DURING THE SHIPPING HOLIDAYS

Although the intention in establishing the shipping holidays at Thanksgiving and (probably) Christmas are excellent, a possibly dangerous situation is incurred. Under the rules established by the SAC-GAC, fruit can be picked during the shipping holidays but cannot be "prepared for market." Fruit that has been picked but not prepared for market is extremely vulnerable to both peel injury and decay which are apt to show up later after the fruit has been prepared, graded, and packed.

To avoid this situation, any fruit that is picked but not washed and waxed MUST be held under humid conditions. It should be brought into the degreening rooms, the fans turned on, and the humidity raised to as close to 100% as possible. It is not necessary or desirable to add heat except in the form of steam to raise the humidity. Fruit held under these conditions has a good chance of avoiding excessive peel injury and decay.

We repeat that any fruit picked and held under drying conditions is apt to be a very poor market risk.

W. Grierson
Horticulturist
Citrus Experiment Station

FUNGICIDE EXPORT TOLERANCES FOR CITRUS

The latest tolerances for thiabendazole (TBZ) on citrus outside the USA provided by Dr. W. L. Kilian (letter of October 29, 1970), Merck, Sharp, & Dohme International are as follows (ppm = parts per million):

<u>"Country</u>	<u>Tolerance PPM</u>
Germany	6 ppm
France	6 ppm (provisional, allows usage)
Belgium	6 ppm
Norway	6 ppm (provisional for 1 year)
Finland	6 ppm (provisional for 1 year)
Italy	6 ppm (Food additive) 3 ppm if used with SOPP or diphenyl
Holland	6 ppm; 3 ppm if used with diphenyl
EEC recommendation is 6 ppm as a food additive	
Canada	2 ppm
Australia	2 ppm

Fungicide--cont.

The situation in England is such that they allow citrus treated with thia-bendazole from Israel, South Africa, and California-Arizona under a temporary provision for testing various applications and use levels. There is also a provision in their law which allows the use of chemicals to preserve the quality of fruit during transit if the chemical is not on their list of carcinogenic compounds. The high safety factor with thiabendazole places it in a favorable category."

We interpret this to mean that you may sell TBZ-treated citrus in England if you can find a buyer.

The tolerance for Dowicide (SOPP) on citrus is 10 ppm. Diphenyl has a citrus tolerance of 70 ppm in Germany and 110 ppm elsewhere.

Will Wardowski
Extension Service
Citrus Experiment Station

REPORT ON REFRIGERATED VAN CONTAINER SERVICE TO EUROPE AVAILABLE

Russell Hinds, USDA, Transportation and Facilities Research Division, is well-known in the Florida citrus industry for his work at TFRD, USDA, Orlando. He and Dr. Bill Chace, formerly at USDA, MQRD, Orlando, are now in Rotterdam, The Netherlands, checking the arrival conditions of U. S. agricultural products shipped to western Europe. A recent paper by Russ Hinds is listed in the Available Publications section of this Newsletter and is highly recommended reading. Points of particular interest are discussed below.

The following important points are listed as having been overlooked by container operators in the early attempts to ship perishables overseas in trailer vans:

- "1. The performance of the refrigerated vans in domestic land transport was far from satisfactory for many products, especially fresh fruits and vegetables.
2. Domestic hauls were much shorter than most overseas movements.
3. Even with the best refrigerated equipment in good working condition, poor cargo loading patterns sometimes lead to disastrous results.
4. Taking transport vehicles that had evolved over a period of many years in one transport environment and placing them in a totally different environment could lead to a host of new problems."

These points are then discussed in detail with improvements and continuing problems pointed out. A problem load of grapefruit that they examined is used as an example and suggestions are offered to improve the arrival conditions of this product.

He lists suggested modifications for refrigerated van containers to allow them to better meet the needs of perishable products follows:

- "1. Controlling temperature throughout the van and its cargo within $\pm 3^\circ$ F of the thermostat setting.
2. Controlling relative humidity to avoid cargo dehydration.
3. Periodic purging of the atmosphere in the van, as necessary, to prevent the buildup of dangerous concentrations of harmful gases.
4. Distributing air uniformly to both the perimeters and interiors of the load.
5. Securing the cargo firmly in place to prevent shifting and disarrangement during handling and transport."

Will Wardowski
Extension Service
Citrus Experiment Station

PERISHABLE PRODUCTS PRESENT PROBLEMS

The transportation of perishable products is a critical and expensive link in the chain of events between the maturity of agricultural products and ultimate consumption. Claims based on temperature failure alone increased 650% from 1958 to 1968 (see articles from Refrigerated Transporter, Available Publications in this Newsletter). While most were due to high temperatures, the opposite problem, chilling injury, of grapefruit is an even more serious problem for the citrus industry. "Chilling" causes dark sunken areas of the peel of grapefruit that may result in 100% loss of the shipment. Early grapefruit may chill at temperatures below 55° F and late grapefruit below 50° F (Packinghouse Newsletter No. 11, November, 1967). More recent work at MQRD, USDA, Orlando and Florida Department of Citrus, Citrus Experiment Station, Lake Alfred substantiates the above recommendations.

The engineers working at TFRD, USDA, Orlando, point out that semi-trailers and "piggybacks" are designed to maintain temperatures in a precooled load, not to lower the temperature of a load. The stacking pattern is very important to equalize temperatures throughout the load and to enable the refrigeration unit to operate to maximum capacity without damaging that portion of the load immediately exposed to the air delivery. All van shipments of Florida citrus in cartons should use the USDA "airstack" loading pattern (see Available Publications).

The problems associated with handling of perishable products, including produce, meats, flowers, and frozen foods, are included in the agenda for a conference of national scope being planned for 1971 by IFAS, University of Florida, and representatives of the packers, shippers, transporters, receivers, and consumers of perishable products. Additional information on this conference will be presented when available.

Will Wardowski
Extension Service
Citrus Experiment Station