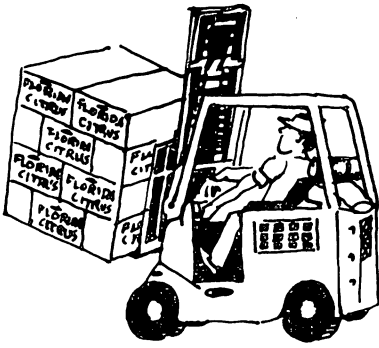


Florida Cooperative Extension Service

PACKINGHOUSE NEWSLETTER



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Key Word Index 2-Aminobutane, Benlate, Canada, Decay Control, Diphenyl, Europe, Export, Maturity, Residue Tolerances, SOPP, Thiabendazole.

EXPORTING FLORIDA GRAPEFRUIT

The export market is becoming a vital factor in the marketing of Florida's grapefruit crop. Last year, almost 8 million cartons were exported all over the world. However, every year we experience marketing losses or poor arrivals because some basic recommendations were not followed. (See Available Publications for publications with recommendations).

The following factors should be considered when exporting Florida grapefruit:

1. Shipping season from mid-October to mid-April, but this depends upon the growing season and weather conditions. The time of harvest has a definite effect on the problems which may occur during transit. Early fruit is susceptible to low-temperature injury, and late-season fruit is susceptible to decay. Fruit exposed to long periods of degreening often develop excessive amounts of decay, hence degreening of export grapefruit should be limited to 48 hours.
2. Generally, the only cultivars that should be shipped are 'Marsh' seedless and 'Ruby Red'. Some markets discriminate against 'Ruby Red' while other markets pay a premium; therefore, know your market.
3. Quality and grade should always be U.S. No. 1 or U.S. No. 1 Bright. Some markets discriminate against discoloration on the grapefruit, while in other markets, it is acceptable.
4. Pretransit treatments should be applied and monitored closely. Degreening should be done properly, and not in excess of 48 hours. All

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fruit must be treated with recommended fungicides. Results from the past several years of export test shipments show that the best decay control was obtained when TBZ (thiabendazole) was applied to the fruit in conjunction with SOPP (sodium-orthophenylphenate). It is also suggested that biphenyl pads be included in each box. Most countries require that the name(s) of the fungicide(s) be placed on the box. In the case of Japan, only biphenyl is approved. Also be aware of chemical residue tolerances for different countries. All fruit should be waxed. After packing, the fruit should be air-precooled to the desired transit temperature. This is accomplished by placing the fruit in refrigerated storage.

5. Packaging of export shipments must be something extra. The export box which must be used is the one identified by the Corrugated Container Institute's number: top - 8T3vv, and bottom - 8T3A. The Railroad Tariff No. for this box is 6481. All fruit should be packed in compliance with the Florida state regulations. Overfilling of grapefruit in boxes causes misshapen and bruised fruit upon arrival. A few cents' saving in packaging costs by using a weaker box generally means losses upon arrival or lost sales for the future.

6. The loading pattern and bracing should be done in accordance with recommended practices. The "modified bonded-block" and the "7-6-7-6-7-6-7" loading patterns and bracing are recommended for van container shipments to insure proper air circulation and load stability. When loading break-bulk shipments, boxes should not be stacked more than 6 to 8 high. The loading pattern used for break-bulk shipments depends upon the air circulation within the ship. A few extra minutes in proper loading and bracing may mean the difference between a good or poor arrival.

7. Vehicle check is always important. In our past experiences with test shipments, we have found van containers which were dirty, refrigeration units inoperative, refrigeration ducts disengaged from the refrigeration unit, doors that would not close, faulty thermostat, drainholes blocked, etc. Somebody should check these points and notify the carrier to replace or repair the van container.

8. Transit environment is very important. Every year since the USDA has had an office in Rotterdam, the Netherlands, their personnel have been requested to observe early-season shipments which have had chilling injury. In most cases, the thermostat had been set at 45° or 50°F upon the request of the shipper or receiver. The recommended temperature for Florida grapefruit is 60°F (15°C) from October until January 1, and 50°F (10°C) from January 1 to April. Relative humidity should be maintained at 85 to 90 percent--this is particularly important in long transit periods.

9. Caribfly control for Japan is still not resolved. Whatever methods and equipment are approved by the Japanese and US plant quarantine officials, all fruit for Japan MUST have a Federal (not State) Phytosanitary Certificate. We have been told that citrus fruit arriving in Japan without a Federal Phytosanitary Certificate will be dumped at sea.

In summary, Florida grapefruit is world renowned; but the only way we can continue to export our product is by following a few basic recommendations, and shipping top-quality fruit. Anybody interested in more detail, please do not hesitate to contact Lake Alfred or U.S. Horticultural Research Laboratory Stations for further detail.

Thanks to Larry Risse, USDA, Rotterdam, the Netherlands and Tim Hatton, USDA, Orlando by whom the above guidelines were compiled. If these recommendations are followed, consumers in other countries will have a good chance of eating high quality Florida grapefruit.

Editor

CITRUS POSTHARVEST FUNGICIDE TOLERANCES

Country	Diphenyl	SOPP ^z	TBZ ^z	Benlate	2AB ^z
USA	110	10	2	10	30
Canada	110	10	10	0	0
Europe	110 ^y	10	6 ^x	-- ^w	0
Japan	70	0	0	0	0

z SOPP: sodium o-phenylphenate. TBZ: thiabendazole.
2AB: 2-aminobutane.

y Except Germany 70 ppm.

x Except Italy 3 ppm if used with diphenyl.

w France 1.5 ppm, Belgium 2 ppm, Holland 5 ppm, Germany 10 ppm, Denmark and United Kingdom no published tolerances and agreement with manufacturer to accept treated fruit, Norway 0 ppm postharvest and 10 ppm preharvest application.

Postharvest fungicide tolerances for citrus used in various countries are listed as ppm (parts per million) in the above table. As changes occur in these tolerances, they will be listed in future issues of this newsletter.

There have been rumors recently that certain fungicides are undetectable in citrus after a short time. This is not true! With modern diagnostic techniques, chemicals are measured in parts per billion (ppb), and 1 ppm equals 1,000 ppb. When any of the above fungicides are used on citrus they can be detected well beyond the marketing life of the fruit.

Will Wardowski
Extension Service

CITRUS PACKINGHOUSE BOOK

A textbook, Citrus Maturity and Packinghouse Procedure, is listed as available at the end of this newsletter. It is the most up to date and complete reference on this subject, and at less than 1¢ per page is a bargain.

Congratulations to Dr. Jim Soule on an excellent publication. Copies will be distributed on a first come, first serve basis and another printing is planned.

Editor

AVAILABLE PUBLICATIONS

Available from Dr. W. F. Wardowski, AREC, P. O. Box 1088, Lake Alfred, FL 33850

"Postharvest Decay Control Recommendations for Fresh Citrus Fruit" by A. A. McCornack and W. F. Wardowski. Extension Circular 359. March 1972.

"Recommendations for Degreening Florida Fresh Citrus Fruits" by W. F. Wardowski and A. A. McCornack. Circular 389. May 1973.

"Mechanization Gets Going in Florida" by W. F. Wardowski. Subject: Citrus harvesting. American Fruit Grower. Vol. 94(9):58-59. September 1974.

"Thirteenth Annual Citrus Packinghouse Day" programs and abstracts. 14 pages. September 4, 1974.

Available from Agricultural Research Service, USDA, 2120 Camden Rd. Orlando, Florida 32803

"Fiberboard Cartons for Exporting Grapefruit" by Philip W. Hale, Russell H. Hinds, Jr. and Thomas Moffitt. ARS-S-21. 7 pages. September 1973.

Available from Fruit Crops Department, 1172 McCarty Hall, University of Florida, Gainesville, Florida 32611

"Citrus Maturity and Packinghouse Procedure" by James Soule. Fruit Crops 437 textbook with 203 pages plus 36 pages of references and table of contents. August 1974. Price \$2.00.

"Proceedings of the First International Citrus Short Course: Citrus Rootstocks" edited by L. K. Jackson, A. H. Krezdorn and J. Soule. 176 pages. July 1974. Price \$5.00.

The use of trade names in this publication is solely for the purpose of providing specific information. It is not a guarantee or warranty of the products named and does not signify that they are approved to the exclusion of others of suitable composition.

This newsletter is published monthly at a cost of \$81.85, or 8.2 cents per copy, to give the latest news to the packinghouse industry.

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