



**INSTITUTE OF FOOD AND
AGRICULTURAL SCIENCES**
UNIVERSITY OF FLORIDA

**FLORIDA
COOPERATIVE
EXTENSION SERVICE**

PACKINGHOUSE NEWSLETTER

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FUMIGATION OF CITRUS AT THE DOYLE CONNER BUILDING, GAINESVILLE, FLORIDA

With the beginning of the citrus shipping season for 1979-80, the Florida Department of Agriculture and Consumer Services, Division of Plant Industry (DPI) would like to offer the following information concerning state and foreign requirements, with special regard to trucks destined for fumigation in Gainesville.

CITRUS FUMIGATION REQUIREMENTS

STATE OR COUNTRY	FUMIGATION REQUIRED FOR DELIVERY	EXCLUSIONS	CERTIFICATES WHICH MUST ACCOMPANY LOAD TO CHAMBERS	OTHER REQUIREMENTS
Arizona	EDB*, and HCN or MB**	lemons and green limes	Request for Fumigation	1) Fumigation required for transit through Arizona. 2) Each carton must be certified. 3) Contact DPI 24 hrs. prior to shipment.
California	EDB*	lemons and green limes	Request for Fumigation	Fumigation required for transit through California.
Hawaii	EDB*	none	Request for Fumigation	none
Texas	EDB*	lemons and green limes	Request for Fumigation	none
Japan	EDB*	none	Request for Fumigation and Export Certificate	none
Other Countries	Check with DPI, (904) 372-3505. Do not rely on past shipments or information from local offices, as status is subject to abrupt changes.			

* EDB (ethylene dibromide), used for Caribbean fruit fly.

** HCN (hydrocyanic gas) or MB (methyl bromide), used for scale and other insects.

Request for Fumigation forms are required for fumigation at the Gainesville Fumigation Chambers. A supply of these forms is available upon request. These forms may be obtained from the Division of Plant Industry, Bureau of Methods Development, P. O. Box 1269, Gainesville, FL 32602, telephone (904) 372-3505, ext. 105 or 136.

Export Certificates are issued by the local Division of Fruit and Vegetable Inspection officials at the time of inspection. If the commodity is a specialty fruit and is not included under the Citrus Marketing Agreement, whereby the Division of Fruit and Vegetable Inspection is not involved, contact the DPI Methods Development office at the above telephone number at least 24 hours prior to shipment so that certification for export to Japan can be arranged.

Arizona requires that each carton of fruit be stamped as having been fumigated. For logistical reasons this must be done at the packinghouse. Contact the Methods Development office at the above number 24 hours prior to shipment.

Three very important conditions must be met in regard to the semi-trailers destined for fumigation. They are as follows:

1. Trailer landing gear must be in good working order and capable of supporting the loaded trailer. Trailers will have to be disconnected from the tractors since the fumigation chambers accommodate only the trailer.
2. All trailers must have front and rear vents. It is extremely important that front and rear vents remain open for at least the first 12 hours of travel after fumigation to evacuate the fumigant remaining in the fruit, carton, and air in the trailer. If proper aeration is not provided, damage to the fruit may occur. This is extremely likely with the tender fruit shipped early in the season.
3. Do not cool fruit prior to fumigation. Fruit should be at ambient temperatures at the time of fumigation.

Contact the Division of Plant Industry, Methods Development office at (904) 372-3505, ext. 105 or 136, regarding any questions or problems concerning fumigation of citrus fruit being shipped out of the state.

Ralph E. Brown, Chief
Methods Development
Fla. Dept. of Agriculture
and Consumer Services
Division of Plant Industry
Gainesville

FUMIGATION OF CITRUS AT THE WAHNETA AND FORT PIERCE STATIONS, FLORIDA

I have reviewed the above article and find it to be correct for the operation of the fumigation stations at Wahneta (near Bartow) and Fort Pierce with the following exceptions: (1) There is no Request for Fumigation form; (2) Vents must be screened going to Florida Ports; (3) Trailers are required to have a means of

locking trailer doors in a straight back position prior to entering chambers. This can be done in a variety of ways, but doors must be secured so that they don't come open while backing in or leaving the chambers. Metal latches are recommended and tying doors with string or light cord is not allowed. These stations are larger, with 12 chambers at Wahneta and 16 chambers at Fort Pierce, and the citrus fumigated is predominately destined for Japan.

The need for adequate truck ventilation is extremely important. Trucks leaving our fumigation stations for ports in Tampa or Port Everglades do not have 12 hours of travel time for ventilation of the loads. These trucks should be ventilated while traveling to the ports and unloaded quickly for additional aeration to avoid fruit damage.

Contact the Division of Fruit and Vegetable Inspection at (813) 294-3511 or write to P. O. Box 1072, Winter Haven, FL 33880 if you have any questions about fumigation at these stations.

John Whitesides, Chief
Bureau of Processing Plant
Inspection and Fumigation
Florida Division of Fruit
and Vegetable Inspection
Winter Haven

CHILLING INJURY OF GRAPEFRUIT

We have followed chilling injury of grapefruit in considerable detail for half a dozen years, picking at approximately 2 weekly intervals. Every year is different except for one thing; the nearest harvest to October 15 is the one that is the most susceptible to chilling injury. Curiously enough, this does not seem to relate to whether it is an early or late season, or to the weather conditions at harvest. Mid-October is the most dangerous period.

Shippers should keep this in mind, particularly if they contemplate using diphenyl pads for overseas shipments as, in such susceptible periods, diphenyl can increase the danger of chilling injury.

Some other comments on our observations might be of interest. As long as the trees are in vigorous growth flush, we find grapefruit particularly susceptible to chilling injury. The most resistant period comes when the trees are dormant and after a long, warm, dry period. Fruit picked in the early morning is more susceptible than fruit picked in the late afternoon. Fruit stored immediately is more susceptible than fruit which is not cooled until at least two days after picking. Degreening increases the resistance to chilling injury but we have not separated how much is due to ethylene, to delay per se and to weight loss. The most resistant grapefruit of all are those picked in the late afternoon during a warm, dry, midwinter period and not refrigerated until they have lost approximately 2% of their weight at picking.

Bill Grierson
Al Purvis
AREC, Lake Alfred

GROWERS' RETURNS AND MARKETING COSTS

Grower's returns from citrus products vary considerably by product and type of fruit. Also, growers have in general received a lower percentage of the consumers' dollar spent on fresh fruit than on processed products even though returns for fresh fruit have generally been higher than returns from processed products.

Costs of picking, hauling, packing and processing citrus products have increased and are taking more of the industry's revenue. Materials costs for all citrus products have been a major recent cost increase factor. It seems quite clear that the industry should examine alternative ways of packaging so that the materials cost increases can be controlled.

For fresh fruit, the FOB-retail margin should be the target of considerable research. An 8 percent reduction in the FOB-retail margin would be as significant as eliminating all picking and hauling costs.

In general, on-tree returns and pick and haul costs are more variable than any of the components of the citrus marketing bill.

Dan Tilley
Food & Resource Economics Dept.
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Gainesville

The above is the summary from a recent publication — see Available Publications.
Editor

AVAILABLE PUBLICATIONS

Available from Dr. D. S. Tilley, 1157 McCarty Hall, Food & Resource Economics Dept., University of Florida, Gainesville, FL 32611

"Growers' returns and marketing costs at each stage of the vertical marketing system for citrus" by Daniel S. Tilley and Richard L. Kilmer. Economic Information Report 112. 1979.


Available from Produce Marketing Association, 700 Barksdale Road, Suite 6, Newark, DE 19711

The 1979 edition of PMA's 80 page "Labeling Requirements" book which includes Federal and State labeling requirements as well as the Canadian Labeling Laws and Regulations. Cost: \$7.50 for PMA members and \$15.00 for non-members.

Available from Dr. S. V. Ting, FDOC, Post Office Box 1088, Lake Alfred, FL 33850

"Thirtieth Annual Citrus Processors' Meeting." Twenty-five page program for the October 11, 1979 meeting.

This newsletter is published at a cost of \$77.70 or 6 cents per copy, to give the latest news to the packinghouse industry.


W. Wardowski, Editor
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Extension Horticulturist