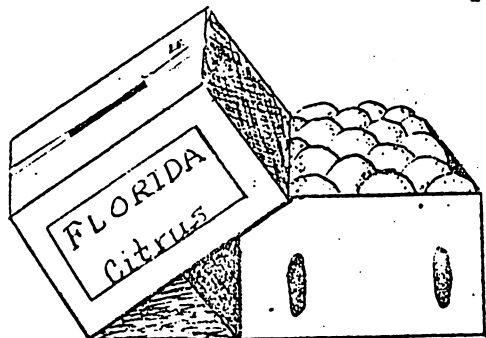


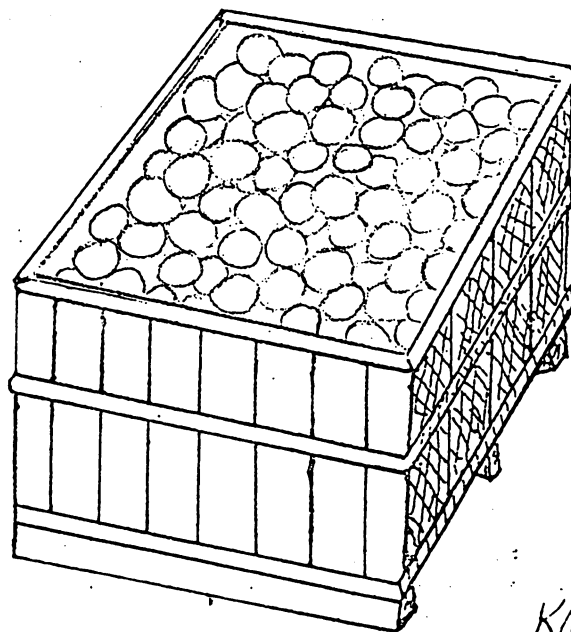
UNIVERSITY OF FLORIDA INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

and

FLORIDA CITRUS COMMISSION



# Packinghouse Newsletter



Harvesting and Handling Section  
University of Florida  
Citrus Experiment Station  
P.O. Box 1088  
Lake Alfred, Florida, 33850

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

*KV*

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

ETHYLENE EXPLOSION HAZARD

We regret to hear of a serious accident in which several packinghouse workers were injured in an ethylene explosion. We have been asked whether special precautions (such as "No Smoking" signs) are necessary in degreening rooms. There is absolutely no hazard from normal degreening concentrations, for which we recommend using ethylene at 1 to 5 parts per million. Ethylene is explosive in concentrations of 3 to 34 percent in air. This lower limit of 3 percent is 30,000 parts per million or 6,000 times more ethylene than the maximum that we recommend for degreening.

However, ethylene is an explosive gas comparable to natural gas, "L.P." gas, and others used for fuel purposes, in kitchens, laboratories, and commercial establishments. When ethylene lines are suspected of leaking, all open flames should be put out and electrical equipment that may spark should be turned off. DETECT ETHYLENE LEAKS BY PAINTING JOINTS, VALVES, ETC. WITH DILUTE SOAP SOLUTION, NOT BY USING AN OPEN FLAME.

One more point: ethylene trickle units are often filled with white mineral oil, rather than water, as this remains clear and does not cloud with rust or algae. Such mineral oil is safe and non-volatile. Do not confuse this with "mineral spirits" which is almost as inflammable as gasoline.

FRUIT PICKED DURING THE SHIPPING HOLIDAY

The last paragraph of the Growers Administrative Committee release for December 3, 1968 (dealing with the December 22 to 30 shipping holiday) states:

"According to the definition of 'prepare for market' given in the agreement and order, the fruit may be picked and brought into the packinghouse and gassed or left in the field boxes without being considered as 'prepared for market,' and therefore would be eligible for shipment after the termination of the holiday period if not carried beyond this point in the normal preparation of the fruit for shipment."

Attention is drawn to the fact that holding such picked, unwashed fruit under dry conditions can lead to subsequent disastrous losses from decay. The following table shows the effect, in a typical experiment, of 48 hours or less under drying conditions.

Effect of delayed handling on decay potential of 'Valencia' oranges held at 70°F (21°C) after packing.<sup>a</sup>

<u>Treatment</u>	<u>% decay at 2 weeks from picking</u>
Processed immediately <sup>b</sup>	3.8
48 hours on packing- house floor	12.5
44 hours delay <sup>c</sup> outdoors	47.5

<sup>a</sup>From Hopkins and McCornack 1960, Proc. Fla. State Hort. Soc. 73:263-269.

<sup>b</sup>"Processed" = washed, waxed, packed in cartons.

<sup>c</sup>"Outdoors" = 22 hours on truck bed and 22 hours in shade of a tree.

If such "non-prepared fruit" is to be held, subsequent decay can be greatly reduced by holding under humid (but not wet) conditions. Keep in a degreening room with the room closed, fan on, steam or water for high humidity, but heat and ethylene turned off as soon as the fruit is degreened.

Even with such precautions, we do not advise holding non-waxed fruit for more than 2 or 3 days longer than the time necessary for normal handling and degreening.

#### AVAILABLE PUBLICATIONS

"Consumer Packaging of Citrus Fruits," by W. Grierson, a ten-page reprint from the 1968 Yearbook of the Produce Packaging and Marketing Association.

From Superintendent of Documents, U. S. Government Printing Office, Washington, D. C., 20402, at a price of \$1.00, Agriculture Handbook 66 entitled, "The Commercial Storage of Fruits, Vegetables and Florist and Nursery Stocks." This handbook contains a wealth of information on essential storage requirements for fresh fruits and vegetables.