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Citrus Station Mimeo Report CES 70-4
August 11, 1969
650-WFW-Lake Alfred, Florida

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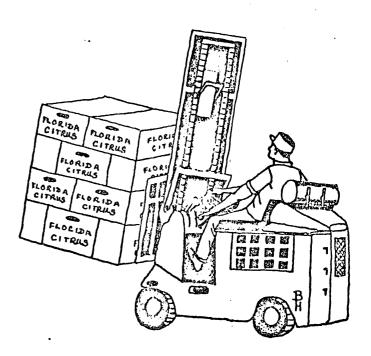
Packinghouse Newsletter

UNIVERSITY OF FLORIDA INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

and

FLORIDA CITRUS COMMISSION

*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

PACKINGHOUSE NEWSLETTER

STYLAR-END BREAKDOWN OF LIMES

We have been receiving a number of calls inquiring as to the advisability of using a wax containing Dowicide A in order to control stylar-end breakdown of limes. This starts as a physiological disorder and we know of no experimental work to indicate that a Dowicide wax would be helpful. Various research results indicate that 2,4-D may be helpful in both maintaining green color and reducing breakdown. Wax formulations containing 2,4-D are commercially available and there is a 5 ppm tolerance for residue of 2,4-D on citrus fruits (including limes).

It is emphasized that when limes are susceptible to stylar-end breakdown (which coincides approximately with the rainy season) merely bumping a sound lime on the stylar end can cause the onset of stylar-end breakdown. This is particularly true with early morning pickings

If you wish Xerox copies of research papers relating to the above comments, write to Dr. Wardowski, Editor of this Newsletter.

Carl W. Campbell
Sub-Tropical Experiment Station
and
W. Grierson
Citrus Experiment Station.

PALLETIZED SHIPMENT OF FRESH CITRUS FRUIT

Because of the keen interest in shipping palletized containers of fresh citrus fruit, preliminary information is given concerning steps being taken in Florida in the early use of this method of shipment.

In some cases, the specially equipped lift truck required for working with slip-sheet-type pallets has been purchased; in others, lift trucks already in use have been equipped with the needed mechanism for handling the slip-sheet pallets.

One of the major points of concern has been a pattern for placing bagmaster containers on pallets that will allow proper air movement and still permit loading a semitrailer with a sufficient number of bagmasters to give economical transportation cost. Representatives of the Transportation Research Branch, Transportation and Facilities Research Division, Agricultural Research Service, U. S. Department of Agriculture, have been working on development of patterns and assisting shippers in making test shipments. A pattern was developed for using 40- x 52-inch corrugated fiberboard slip sheets, with a 40- x 48-inch loading surface, which permitted a load of 828 bagmasters in a trailer. Eight

hundred is considered the minimum number desirable in a load. Containers projected 1/4 inch beyond one end (opposite the pull tab) and 1-1/8 inch beyond pallet edges on each side.

At one packinghouse which uses the above-mentioned pattern, loading in the trailer is actually in two tiers; that is, one slip-sheet pallet on the floor of the trailer carries 26 bagmasters, and another slip-sheet pallet on top of this carries 20 bagmasters, making up a unit of 46 containers. Eighteen of these two-tiered units are placed in the trailer. No glue or adhesive material is placed between the layers of cartons. One turn of a high-strength tape is placed around the top layer of the completed two-tiered unit. The management at this packinghouse feels that tiering contributes considerably to the stability of the unit load as a whole, because one slip sheet is at an intermediate point relative to the full height of the load. Results from shipping-point examination by the receiver have indicated that this load arrangement carries well and the product arrives in good condition.

The standard 4/5-bushel carton, because of its dimensions, could be fitted into a unitizing pattern for slip sheets to give better than the minimum number desired for a trailer load. In trial operations, pallet patterns have contained 54 cartons, or 972 cartons per 18-pallet load, without an "intermediate" pallet as was used for the bagmaster palletizing.

Thus far, nothing has been done in Florida citrus packinghouses to mechanize the palletizing of containers. However, the labor costs are reduced through the elimination of manual handling of containers. The elimination of manual handling of containers in the shipping vehicle results in a saving in labor of approximately 0.113 man-hours per ton, or 2 man-hours per trailer load of 18 pallet units. At the destination, the manual handling involved in placing individual containers onto pallets is eliminated, giving a labor saving of approximately the same amount per load (2 man-hours) as at the shipping point. In addition, the time required for handling empty pallets of the conventional type is saved at both the shipping and receiving points, though a value for the time saved is not currently available.

Trial operations have indicated the following additional cost effects of using corrugated fiberboard slip sheets:

- 1. The lift truck with equipment for handling slip-sheet pallets costs approximately \$12,000.
- 2. Adding equipment for handling slip-sheet pallets to an existing forklift truck of 4000-pound capacity costs about \$4,000 to \$5,000, including side shifter.
- 3. The 40- x 48-inch (loading surface) slip sheets of corrugated fiberboard cost about 25 cents each.
- 4. The cost of the high-strength tape is about \$2.00 per trailer load.

^{2/} Marketing Research Report No. 478 "Receiving Fruits and Vegetables in Wholesale Warehouses" Transportation and Facilities Research Division, Agricultural Marketing Service, U. S. Department of Agriculture

5. The bagmaster box may have to be strengthened by heavier stock, in the lid only, to withstand the vertical pressure in a unit load of 46 bagmasters, which would increase the cost by 2 to 3 cents per carton.

The slip-sheet type is the lowest in cost of the expendable pallets, though it requires more expensive lift truck equipment than a type of expendable pallet that can be used with regular forks on the lift truck.

When too many different kinds of fruit in small quantities must go into one trailer, difficulty arises in using the palletized method of shipment, because some small-quantity items may not fill one pallet with the given item.

Earl K. Bowman, Industrial Engineer Transportation and Facilities Research Division, Agricultural Research Service, U. S. Department of Agriculture.

PACKINGHOUSE NEWSLETTER COVER

We are indebted to Mrs. Brenda Hawarah, Secretary, Citrus Experiment Station for the preparation of our new cover and wish to thank her for her talented assistance.

THE NEWSLETTER ACQUIRES AN EDITOR

Attention is drawn to the fact that not only do we have a new cover (courtesy of Mrs. Brenda Hawarah in our Secretarial Office) but our "masthead" now includes an editor--Dr. W. F. Wardowski. Will Wardowski is a member of the Florida Agricultural Extension Service and a member of the Harvesting and Handling Section at Lake Alfred. To the best of our knowledge he is the first Extension Specialist in the field of postharvest handling of fruits.

He comes to us from Michigan where he grew up on a fruit farm and took his doctorate at Michigan State. Later, he covered a six-state midwestern territory for the Upjohn Company advising on the use of their agricultural chemicals.

In time, Will Wardowski will come to handle the greater part of our extension activities. As a starter, please write to him for all publications mentioned in this Newsletter; and on routine phone calls, ask for him if you cannot get the staff member with whom you are used to dealing.

W. Grierson Citrus Experiment Station.

EIGHTH ANNUAL PACKINGHOUSE DAY

Wednesday, September 3, 1969 Auditorium, Citrus Experiment Station, Lake Alfred 10:00 a.m. to 2:00 p.m.

Mark your calendars for a fact-filled program to begin your 69-70 season on the right foot. All interested parties are welcome.

AVAILABLE PUBLICATIONS

Available from the Harvesting and Handling Section, Citrus Experiment Station

"Use of Benzimidazoles for Control of Fungi in Peel Cultures of Citrus Fruits", Winter 1968. M. F. Oberbacher and G. Eldon Brown, HortScience, Vol. 3(4).

"Physoderma citri in Citrus Albedo and Callus Tissue", Feb. 1969. G. Eldon Brown and M. F. Oberbacher, Phytopathology, Vol. 59, No. 2, 241-242.

"Legal Maturity of 'Temple' Oranges as Influenced by Lead Arsenate Sprays", Summer 1969. R. L. Reese and G. Eldon Brown, HortScience Vol. 4(2).

Available from USDA, TFRD, 2520 N. Orange Avenue, Orlando, Florida 32804

"Feasibility of Shipping 'Temple' Oranges in Plastic-Cell Tray-Pack Fiberboard Boxes", July 1969. Philip W. Hale, et. al., TFRD, ARS, USDA, ARS 52-35.