



INSTITUTE OF FOOD AND  
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FLORIDA  
COOPERATIVE  
EXTENSION SERVICE

## PACKINGHOUSE NEWSLETTER

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Key Word Index Decay Control, Frozen Fruit Separators, Machinery, Packers' Corner,  
Surge Control, TV Monitoring, Variable Speed Motors

### MECHANICAL SEPARATORS FOR COLD DAMAGED ORANGES

#### Installation of Separators

An installation in which a mechanical separator (or separators) delivers fruit direct to the packing lines greatly decreases the out-put of the packinghouse by limiting it to the volume of sound fruit being separated at any given moment. This makes for a very expensive operation.

Packinghouses using fresh fruit bulk bins or pallet boxes should consider running the separators independently of the packing lines. A small crew, working long hours, can accumulate a pool of separated fruit. This "pre-separated fruit", when run through the packinghouse, will have a very high packout, ensuring a high volume of packed fruit per man-hour of operating time.

#### Efficiency of Frozen Fruit Separators

Three types of separators are in general use. These include two types of water separators; one in which the fruit drops in and separation depends upon both how deep the fruit sinks and how fast it rises; and a more common type of water separator which delivers the fruit underwater and separation depends only on how fast it rises. The third type of separator is the chemical or oil emulsion separator which uses an emulsion of oil and water whose specific gravity is adjusted to be between that of the good fruit and the frozen fruit. In all these, of course, separation is based on the fact that the specific gravity of the frozen fruit is typically less than that of the non-frozen fruit.

A detailed discussion of these types of separators and the handling of freeze damaged citrus fruit is found in Circular 372 (see Available Publications).

Will Wardowski  
Extension Service

Bill Grierson  
AREC  
Lake Alfred

USE OF FUNGICIDES IN FROZEN FRUIT SEPARATOR FLUID

No experimental work has been done at the AREC to determine the value of using fungicides in frozen fruit separators. Fungicides have reportedly been used commercially in an oil emulsion separator with some success, and they should be equally effective in a water separator.

Both water and oil emulsion-type separators soon become contaminated with mold spores, thereby increasing decay hazards. Only very limited control measures can be taken. Water separators should be drained each night and refilled. Even when this is done, serious contamination can occur during the course of the day. This can be minimized by adding fungicides such as borax, TBZ or benlate to the water. Chlorination can also be used with water separators.

This is, however, a supplement to, not a substitute for, normal fungicide treatment, since most of the residue is removed by subsequent washing.

Eldon Brown  
FDOC  
Lake Alfred

NEW PACKINGHOUSE LINE AT LAKE ALFRED

At Citrus Packinghouse Day, September 1980, representatives of Decco Tilt-belt Division, Pennwalt Corporation suggested that they could provide AREC, Lake Alfred a new packing line at nominal cost. The offer was one that could not be refused and most of the equipment (our old big packingline) in the AREC packinghouse has been replaced by a new gift fruit sized packingline. The new packingline was manufactured in Italy by Decco Rhoda SPA Division of Pennwalt Corp. It is compact and a welcome change from the patched together, ancient equipment that it replaced.

Anyone interested in viewing this new equipment is welcome to stop by. It will be a focal point of equipment displays at Citrus Packinghouse Day, Wednesday, September 9, 1981.

My sincere "thank you" to Decco Tiltbelt is echoed by many people using this equipment.

Will Wardowski  
Extension Service  
Lake Alfred

***PACKER'S CORNER***TV MONITORING

Jim Ellis, Lake Garfield Citrus Coop. has installed a closed circuit television in the packinghouse foreman's office with cameras at two locations. The foreman can, at the flip of a switch, view the two locations to monitor employees and fruit flow. Jim reports that the cost is relatively low (less than \$800.00) and that they have already realized benefits from this innovation. Also, Ed MacKenzie, Brooksville Citrus Growers' Association, will soon install a similar unit.

VARIABLE SPEED SURGE CONTROL

Earl Scales, G&S Packing Co., Wiersdale, Florida asked us to inspect his means of improving a long standing surge problem immediately after the dumper. The device is a variable speed motor on the dumper take-away belt, that automatically (by a photo cell) runs slower with a large fruit load and faster with a small fruit load. There are many successful means of regulating fruit flow following the dumper. Earl Scales wants to share his innovative success with you.

INTERNATIONAL CONTRIBUTORS

Packers and research workers outside of Florida and outside of the United States are invited to contribute to Packers' Corner. Many relatively inexpensive innovative ideas are employed in most packinghouses. If you have or have seen a good idea that can be shared, please send it to us for consideration in this column. Many Packers' Corner ideas are in use in many locations, they don't have to be unique. We welcome those packers willing to share innovations.

Will Wardowski  
Extension Service  
Lake Alfred

**CITRUS PACKINGHOUSE DAY**  
**Wednesday, September 9, 1981**  
**Agricultural Research & Education Center**  
**Lake Alfred**

AVAILABLE PUBLICATIONS

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

"Separation and grading of freeze damaged citrus fruits" by W. F. Wardowski and W. Grierson. University of Florida Extension Circular 372. April 1972. 14 pages.

"Fruit handling and decay control techniques affecting quality" by G. E. Brown. Chapter 10, pp. 193-224 of Citrus Nutrition and Quality (see below). 1980.

"Evaluation and control of undesirable flavors in processed citrus juices" by S. Nagy and R. Rouseff. Pages 171-199 of The Analysis and Control of Less Desirable Flavors in Foods and Beverages. Academic Press, Inc. 1980.

Available from Division of Fruit & Vegetable Inspection, P. O. Box 1072, Winter Haven, FL 33880

"1979-80 Season Annual Report."

Available from Florida Fruit Digest Co., 333 Laura Street, Suite 360, Jacksonville, FL 32202

"The Florida Fruit and Vegetable Directory, 1981 Season" published by Florida Fruit Digest Co. Price: \$7.00. Add 66¢ postage domestic or \$1.00 postage foreign, and 28¢ sales tax for Florida residents.

Available from Special Issues Sales Department, American Chemical Society, 1155 Sixteenth Street, NW, Washington, DC 20036

Citrus Nutrition and Quality. Editors. S. Nagy and J. A. Attaway. 1980. 456 pages.

This eighteen-chapter volume explores the topics of nutrition and health; quality as related to specific biochemical components; effects of handling and processing; quality control and evaluation; regulatory implication; and adulteration. Price: \$33.50.



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Professor  
Extension Horticulturist

This newsletter is published at a cost of \$80.40 or 7¢ cents per copy, to give the latest news to the packinghouse industry.