Newsletter No. 12 (*-*)
Citrus Station Mimeo Report CES 68-16

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).

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December 19, 1967

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

PEEL INJURY OF ORANGES

IMPORTANT WARNING

Dow-hex, or any other Dowicide formulation used as a wash, flood, or dip MUST be throughly rinsed from the fruit before any other packinghouse treatment. Do not worry about the possibility of over-rinsing. This fungicide forms an insoluble precipitate in the cracks, plugs, and minute scratches where it is needed.

It is particularly important that the contamination of the color-add emulsion with Dowicide should be at a minimum. The color-add emulsion and o-phenylphenol (Dowicide) are not compatible. When the fungicide applicator is in the packing line just before the color-add tank, the rinse must be efficient. Three rows of wide angle nozzles on staggered centers are not excessive.

We hope that frozen fruit separators are not needed this season. But if they are, be careful not to get Dowicide into an oil emulsion separator. There is no danger with water-type separators.

PLEASE NOTE: This is not a change in the recommended Dow-hex procedure. This only emphasizes the importance of the instruction to rinse properly. A number of packinghouses who have followed the recommended procedures for 10 years have not encountered any trouble at all--but they have good rinses.

PUBLICATIONS OF INTEREST

Publications that may be of interest to some readers are listed below. Please note that these are not all available from the Citrus Experiment Station, but we do indicate where to send for them.

1. "Degreening Response of Color-Sorted Florida Oranges," ARS 51-14, October 1967, by Otto L. Jahn, Gilbert E. Yost, and James Soule. This publication is available either from the USDA, in Orlando or Gainesville, and from Dr. J. Soule, Department of Fruit Crops, University of Florida, Gainesville, 32601.

2. "Consumer Packages for Florida Citrus," by W. Grierson, Proceedings of the Florida State Horticultural Society, 79: 274-280, 1966;

and

"Factors Affecting Post-Harvest Market Quality of Citrus Fruits," by W. Grierson, Proceedings of the American Society for Horticultural Science, Caribbean Region, 9: 65-84, 1965. Both of these are available from the Harvesting and Handling Section, Citrus Experiment Station, Lake Alfred, Florida, 33850.

A small table of justifiable investment amounts, developed according to the foregoing explanation, is shown.

APPROXIMATE JUSTIFIABLE EQUIPMENT INVESTMENT WITH RESPECT TO SPECIFIED ANNUAL LABOR SAVINGS, INTEREST RATE, AND PERIOD OF TIME

Annual Saving in Labor		Interest at 6%			Interest at 10%		
No. Wkrs.	Dollars[2]	5 yr.	8 yr.	10 yr.	5 yr.	8 yr.	10 yr.
		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
2	3,584	15,097	22,255	26,378	13,586	19,121	22,022
3	5,376	22,645	33,383	39,567	20,379	28,681	33,032
4	7,168	30,194	44,511	52,756	27,172	38,242	44,043
5	8,960	37,742	55,638	65,945	33,965	47,802	55,054
Capital-recovery factor[3]		(.23740)	(.16104)	(.13587)	(.26380)	(.18744)	(.16275)

[2] Based upon 32 weeks, of 40 hours, per year and hourly rate of $1.40.

[3] "Equal-payment-series-Capital-recovery Computations," Industrial Engineering Handbook, H. B. Maynard. Annual savings divided by factor equals investment amount.

3. "Quality Tests for Citrus Fruits," Agricultural Extension Service Circular 315, June, 1967, by J. Soule, W. Grierson, and J. G. Blair, available from the Mailing Room, Agricultural Experiment Stations, University of Florida, Gainesville, 32601.

PACKINGHOUSE MODERNIZATION

GUIDELINES FOR AMOUNT OF INVESTMENT FOR EQUIPMENT CHANGES[1/]

A vital part of the management function of a citrus firm, as with virtually all kinds of enterprises, is the continuing appraisal of a variety of situations in which present equipment may be replaced with more modern units. Decisions must come sooner or later. Always interwoven in the decision-making is the familiar question "will it pay?"

A detailed cost comparison for two or more alternatives is usually laborious and time consuming. Thus, a quickly accessible guideline with some sacrifice in accuracy, can be useful. In some cases, by preliminary use of such guidelines, it would be possible to eliminate some alternatives and give all attention to a thorough comparison of those left after the first "screening."

Given reasonably accurate labor savings per year, for example, management may have easy-to-use guidelines which are based upon capital recovery formulas. The information is presented in table form so that, for various interest rates and periods of time, management may see an amount which, in a screening stage, can be considered justifiable investment for the estimated savings from a possible change.

It must always be remembered that the formulas do not taken into account any expenses except depreciation and interest on the investment. Therefore, before final steps are taken, the net savings for given alternatives need to be calculated and comparisons made. In this, all significant items of operating and maintenance expense should be considered as well as taxes and insurance.

[1/]Prepared by Earl K. Bowman, Industrial Engineer, ARS, USDA for submission to Packinghouse Newsletter, Citrus Experiment Station, University of Florida.