

PACKINGHOUSE NEWSLETTER

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Key Word Index Grading, Packers' Corner, Packinghouse Day Program, Pollution Control, Water.

TREATMENT AND RECYCLING OF CITRUS PACKINGHOUSE WASTEWATER

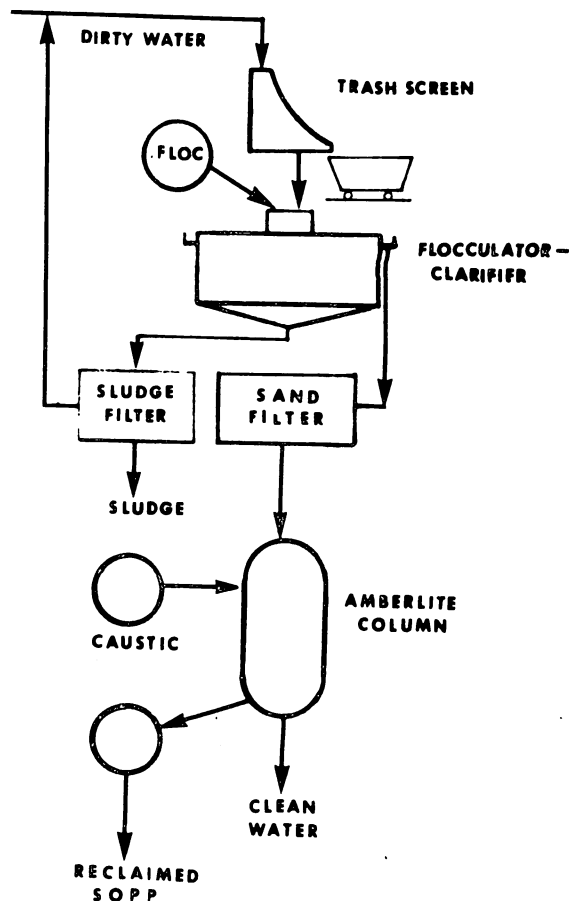
Enforcement of environmental regulations has become so strict that various Florida packinghouses are under notice that they cannot reopen next season unless they amend their ways of disposing of effluent water. The perfect way to avoid such problems is not to have any effluent water. For this reason we have been working on a recycling system.

Physical-chemical methods of wastewater treatment are well suited for treatment of citrus packinghouse effluents. Essentially, packinghouse wastewater is polluted with surface dirt and sooty mold washed off the fruit in addition to small amounts of detergent and in some cases, phenolic compounds, both natural and industrial, e.g. SOPP.

The essential components of a physical-chemical wastewater treatment system are shown in the illustration. Trash, such as leaves, twigs and broken fruit, must be screened from the water before it is delivered into a flocculator-clarifier. A suitable coagulant is added to induce flocculation. Coagulated solids settle to the bottom of the clarifier and are removed at appropriate intervals. Fairly clear wastewater is then passed through a multimedia (garnet, sand and anthracite) filter to remove suspended particles. At this point, filtered water can be reused to prewet and rinse incoming fruit. Complete

WATER AND CHEMICAL RECOVERY SYSTEM A

DEPARTMENT OF CITRUS - A.R.E.C.



purification can be achieved by passing filtered water through a bed of amberlite resin for removal of dissolved organic solids, and finally chlorination for disinfection. Such a system can also be useful in treating wastewater from other fresh fruit and vegetable packing industries.

An experimental recycling system which includes all the above described components has recently been installed at Haines City Citrus Growers Assn. packinghouse, with very encouraging initial results. This pilot plant system will be discussed at Citrus Packinghouse Day, September 6, 1978 and shown to interested parties following the meeting. The effort which went into installing the recycling system represents an excellent example of full cooperation between a citrus research organization and the Florida citrus industry. Without the cooperation of Mr. Art Mathias, General Manager and Mr. Mack Watson, Plant Superintendent at Haines City Citrus Growers Assn., this effort would not have been successful.

Mohamed Ismail
Florida Department of Citrus
Lake Alfred

CITRUS PACKINGHOUSE DAY
WEDNESDAY SEPTEMBER 6, 1978
LAKE ALFRED

The Annual Citrus Packinghouse Day is scheduled Wednesday, September 6, 1978 at the Agricultural Research and Education Center, Lake Alfred with registration starting at 9:00 AM and the program beginning at 9:40 AM. Equipment demonstrations will be viewed during an extended lunch period (box lunches may be purchased at registration). Additionally, a wastewater treatment system capable of recycling used water will be shown at a nearby commercial citrus packinghouse following the meeting.

Topics and speakers for the program are:

The Alternaria threat to new tangerine hybrids, Jack Hearn & John Smoot, USDA, Orlando

Ethrel and Anthracnose of 'Robinson' Tangerines, G. E. Brown, FDOC and Charles Barmore, AREC, Lake Alfred

Winter Temperature as a Factor in Grapefruit Chilling Injury, K. Kawada and Jim Soule, Fruit Crops Department, Gainesville and W. Grierson, AREC, Lake Alfred

Use of Growth Regulators for Improvement of Internal and External Color of 'Ruby Red' Grapefruit, Mohamed Ismail, FDOC, Lake Alfred

Dye as a Tool to Detect Peel Injury of Citrus Fruit, A. A. McCornack, FDOC, Lake Alfred

Structural Adjustments in the Florida Citrus Packinghouse Industry, Richard Kilmer and Daniel Tilley, FRED, Gainesville

Separation of Frozen Grapefruit with Specific Gravity, T. T. Hatton and R. H. Cubbedge, USDA, SEA, Orlando

An International View of Florida's Citrus Internal Quality Standards, W. Wardowski and W. Grierson, AREC, Lake Alfred

Surface Moisture Drying of Fresh Citrus, W. M. Miller, AREC, Lake Alfred

Energy Conservation in Citrus Dryers, Harold Morrison, Mechanical Engineer, Winter Haven and Jim Ellis, Lake Garfield Citrus Co-op., Bartow

Farm Labor Contractor Registration (Federal) as it Pertains to Packinghouses, Oraville A. Day and Albert F. Mickler, Lake Region Packing Assn., Tavares

Citrus Fresh Fruit Packing--Waste Water Disposal, Ralph Maloy, Florida Dept. of Environmental Regulation, Orlando

Treatment and Recycling of Citrus Packinghouse Wastewater, Mohamed Ismail, FDOC, Lake Alfred and Mack Watson, Haines City Citrus Growers Assn.

The USDA Rotterdam Facility, Larry Risse, USDA, Orlando

Various Aspects of Postharvest Fungicides for the Japanese Market, John Smoot and Paul L. Davis, USDA, Orlando

The Sunbelt Dixie--A New Shipping Concept

I. Handling in Tokyo and Improved Pallet Stacking Patterns, Phil Hale, USDA, Orlando

II. The Ship and its Facility, L. Gene Albrigo, AREC, Lake Alfred

In Memoriam

We regret to note the death of "Mr. Citrus", Fred Lawrence, Emeritus Extension Citriculturist of the Fruit Crops Department, University of Florida. Fred retired in 1974, but his personality and accomplishments are legendary. Nearly everyone in the Florida citrus industry knew and respected Fred, and at some time, profited by his advice.

A memorial fund in Fred's memory is being established in the SHARE Foundation Fund. Contributions can be made directly to William J. Messina, c/o SHARE, 3031 McCarty Hall, University of Florida, Gainesville, Florida 32611. Make checks payable to the Fred P. Lawrence Memorial Fund. All contributions are tax-deductible and will be used to support IFAS programs in the Florida fruit industry.

PACKERS' CORNER

DEGREENING DOOR LIFT

Raising heavy degreening room curtains has been a strain on workers, particularly in the last few years since the large rooms designed at this Center have been generally adopted by the industry. John Moore, Mechanic at G & S Packing Co., Weirsdale devised simple crank to raise and lower the canvas doors with a great deal less effort. His

next step will be to control each crank with a small gear motor rather than cranking them by hand. If you are near Weirsdale, stop by and give John the greatest compliment---imitation.

Will Wardowski
Extension Service
Lake Alfred

SAVE MONEY ON WAXES AND FUNGICIDES

Grading after citrus fruit are treated with a fungicide and waxed is a waste of these materials. It is a commercial procedure in at least two Florida packinghouses to grade immediately after washing. Apply fungicides and waxes only to fruit to be packed. Added benefits are:

1. Only fruit to be packed are dried (fuel savings are considerable).
2. Eliminations do not have food additives when delivered to the processing plant.
3. The packingline is used more efficiently after eliminations are removed.

Consider grading immediately after washing. It will lower packing costs.

Andy McCornack
Florida Department of Citrus
Lake Alfred

Will Wardowski
Extension Service
Lake Alfred

AVAILABLE PUBLICATIONS

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

Packinghouse Newsletter Index for issues 1-94.

"Hypersensitive response of orange-colored 'Robinson' tangerines to Colletotrichum gloeosporioides after ethylene treatment" by G. E. Brown. *Phytopathology* 68:700-706, 1978.

Available from Mr. Ben Abbitt, AREC, P. O. Box 1088, Lake Alfred, FL 33850

"Factors to consider in purchasing a citrus grove" by D. L. Brooke and B. Abbitt. Circular 437. Undated. 14 pages.



W. Wardowski, Editor
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Extension Horticulturist

This newsletter is published at a cost of \$86.70 or 7.8 cents per copy, to give the latest news to the packinghouse industry.