



INSTITUTE OF FOOD AND
AGRICULTURAL SCIENCES
UNIVERSITY OF FLORIDA

FLORIDA
COOPERATIVE
EXTENSION SERVICE

PACKINGHOUSE NEWSLETTER

W. Wardowski, Editor
CREC
700 Experiment Station Road
Lake Alfred, FL 33850
Phone (813) 956-1151

Packinghouse Newsletter No. 137

June 29, 1984

Key Word Index Lemons, Packinghouse Day Program

FLORIDA FRESH LEMONS

Florida fresh lemons are mature just in time for the hot summer lemon marketing season. Several general comments can answer the most commonly asked questions. More details may be found in Bulletin 184 and Circular 410 (see Available Publications).

Harvesting & Hauling. Experienced, careful pickers and attentive management are essential to deliver the delicate fresh lemons to the packinghouse undamaged. The profits from many lemon crops, including the total production, harvesting and hauling costs, have been lost due to oil spotting (oleocellosis) when oil cells are broken during harvesting or transporting the crop to the packinghouse. Oil spotting is an especially severe problem for lemons when they are turgid following rain, irrigation, or early morning dew. A pressure tester is used to determine the pressure to rupture the peel oil cells in order to determine when the lemons may be harvested safely. Small picking bags holding about 45 lbs. (20 kg) with support frames are now used in Florida to harvest *most lemons*. Lemons should NOT be harvested in the traditional large Florida citrus picking bag. Lemons are the only citrus fruit that benefit from a delay after harvest, as they should sit in pallet boxes in the field overnight, and loaded and transported the next day.

Maturity Standards. The only maturity standard for lemons is a 30% minimum juice volume. Florida lemons seldom fail to meet this requirement, but care should be taken to test each crop for juice content before harvest.

Curing vs. Degreening. Curing is the safer method of removing the green color by holding the fruit 2 to 3 weeks at 60°F and 95% relative humidity. The fruit produce very low amounts of ethylene which slowly degreen them with minimum decay. Lemons usually gain in extractable juice during curing. Florida lemons have been commercially degreened by adding 5 parts per million ethylene for a

maximum of 36 hours (see Available Publication by Barmore, Wheaton and McCornack). Lemons exposed to ethylene are especially sensitive to stem-end rot so that a preharvest Benlate spray or Benlate or TBZ drench before curing, plus a postcuring treatment with Benlate, imazalil or TBZ is essential. Imazalil (see Packinghouse Newsletter No. 134) is especially effective on molds resistant to Benlate and/or TBZ. Resistance has been a problem in Florida during the curing of lemons in the summer months. Fungicides and waxes must be approved for use on citrus in the countries where it is marketed.

Market Preparation. Pregrading prior to curing can eliminate unmarketable sizes plus obviously blemished fruit but should not be done until rind oil pressure test is 7 lbs or more. Following curing, lemons must be washed, and receive an additional fungicide treatment. Packing with diphenyl pads is recommended. Lemons generally are handled like other citrus fruits but, especially for smaller stores, must often be held for longer periods in the marketing process than for other citrus.

Will Wardowski
Extension Service
Lake Alfred

DR. BURKE MOVING TO OREGON

Dr. Michael Burke, Chairman, Fruit Crops Department, University of Florida for the past five years will leave Florida in late August. He will become Associate Dean of Agriculture and Director of Academic Programs in the College of Agricultural Sciences at Oregon State University, Corvallis, Oregon. Dr. Burke has been a highly visible Chairman of the Fruit Crops Department in the citrus industry because he consistently made trips throughout Florida to attend meetings, visit citrus agents and meet growers. We will miss Dr. Burke's leadership, but wish him well in his new position.

Will Wardowski
Extension Service
Lake Alfred

CITRUS PACKINGHOUSE DAY

The Twenty-third Annual Citrus Packinghouse Day is scheduled Wednesday, September 5, 1984, at the Citrus Research and Education Center, Lake Alfred. This meeting is expected to be attended by 250 to 300 people interested in citrus packinghouses. Talks and displays will be presented by scientists and citrus packers on a variety of timely topics.

The talks will be in the morning, followed by a lunch and afternoon *equipment* displays. Commercial companies are encouraged to reserve space soon by obtaining invitations from the Florida Citrus Packers, P. O. Box 1113, Lakeland, FL 33802, phone (813) 682-0151.

This program is jointly sponsored by the University of Florida, the Florida Department of Citrus and the Florida Citrus Packers. Those attending Citrus Packinghouse Day in recent years represented most of the fresh citrus fruit packed in Florida. Anyone is welcome to attend. We look forward to seeing you there.

Will Wardowski
Extension Service
Lake Alfred

AVAILABLE PUBLICATIONS

Available from Dr. W. Wardowski, CREC, 700 Experiment Station Road, Lake Alfred, FL 33850

Packinghouse Newsletter Index for issues 1-137.

Third Annual Citrus Gift Fruit Day Program and Abstracts: May 1984.

"Energy storage via dessicants for food agricultural applications" by W. M. Miller. Energy in Agriculture, 2(1983):341-354.

"Lake Garfield Citrus Co-op demonstration - on-farm demonstration of solar drying of crops and grains" by M. T. Talbot and W. M. Miller. Univ. of Fla., Agr. Eng. Ext. Mimeo Report 82-34, Dec. 1982.

"Winter Haven Citrus Growers Assn. Demonstration - on-farm demonstration of solar drying of crops and grains" by M. T. Talbot and W. M. Miller. Univ. of Fla., Agr. Eng. Ext. Mimeo Report 82-35, Dec. 1982.

"Lemon production and utilization in Florida" by D. P. H. Tucker and W. F. Wardowski. Fla. Coop. Ext. Serv. Bull. 184. June, 1973.

"Oil spotting (oleocellosis) of citrus fruits" by W. F. Wardowski, A. A. McCornack and W. Grierson. Fla. Coop. Ext. Serv. Circ. 410. July, 1976.

"Ethylene degreening of 'Bearss' lemons" by C. R. Barmore, T. A. Wheaton and A. A. McCornack. HortScience 11(6):588-590. 1976.

Available from Dr. Gary Fairchild, Economic Research Department, 2121 McCarty Hall, University of Florida, Gainesville, FL 32611

"A summary of fresh citrus consumer characteristics" by G. F. Fairchild. Economic Research Report, EER 83-1. August, 1983. Summary report: 5 pages.

"Characteristics of fresh citrus consumers" by N. C. McCabe, G. F. Fairchild and D. S. Tilley. Citrus Industry Report, CIR 83-1. August 1983. Full report: 40 pages.

Available from Dr. E. George Stern, Virginia Polytechnic Institute and State University, Department of Forest Products, Blacksburg, VA 24061-1199.

"Preliminary evaluation of the strength and stiffness of yellow-poplar pallet shock" by T. E. McLain and J. S. Holland. Pallet and Container Lab. Bull. No. 1 (Forest Products Journal 32(11-12):51-56). 1982.

"Performance of pallet joints and pallets assembled with nails and staples" by E. G. Stern. 1980. Pallet and Container Lab. Bull. No. 2. 8 pages.

Available from Dr. Jack Hearn, USDA, Agr. Res. Service, 2120 Camden Road, Orlando, FL 32803

"Development of seedless orange and grapefruit cultivars through seed irradiation" by C. J. Hearn. J. Amer. Soc. Hort. Sci. 109(2):270-273. 1984.

Available from American Council on Science and Health, 47 Maple Street, Summit, NJ 07091

"Ethylene dibromide (EDB)" by W. R. Havender. 27 pages. Price \$2.00.

"Pesticides in your home and garden" by the Staff, ACSH. 26 pages. Price \$2.00.

This newsletter is published at a cost of \$93.28 or 7 cents per copy, to give the latest news to the packinghouse industry.

W. Wardowski
W. Wardowski, Editor
Professor
Extension Horticulturist