



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. 143
May 19, 1986

Key Index Words: Citrus Packinghouse Day, Drying, Gibberellic Acid,
Minneola

GA APPROVED FOR MINNEOLA TANGELO

The use of gibberellic acid (GA) on Minneola tangelo has been approved by the Bureau of Product Data Evaluation, Florida Department of Agriculture and Consumer Services. Pro-Gibb (3.91% GA) liquid formulation is now registered under the Federal Insecticide, Fungicide, Rodenticide Act, as amended, Section 24 (C), Special Local Need, to delay disorders associated with rind aging, e.g., puffiness and softening. A single spray of 10 ppm GA in 500-700 gallons/acre (20-28 grams/acre) is recommended. The registration number is EPS SLN No. FL 850016.

Minneola tangelo, a hybrid of Duncan grapefruit and Dancy tangerine, is one of the most delicate citrus fruit. It is highly prized by the Florida gift fruit shippers and their customers for its sweet flavor and low seed count. The fruit is generally large with a prominent *neck and* deep reddish orange color. Once the fruit attains internal maturity, its quality deteriorates rapidly. This deterioration begins on the tree as tiny, hair-line cracks around the stem end, followed by desiccation, collapse and brown discoloration of the entire stem end. This condition is commonly referred to as "blackeye" by growers and shippers. The onset of the disorder is irreversible and results in shortening the season of good quality fruit. The supply is usually exhausted by mid-January.

Research carried out on Minneola tangelo by the Florida Department of Citrus since 1983 demonstrated that the application of 10 ppm GA as a dilute spray in early December resulted in delaying the onset of the stem-end rind disorder and extended the season of good quality fruit by 3-5 weeks. Further extension of the length of marketing season by 4-6 weeks was achieved by fruit storage at 45 F. Treated fruit were orange in color, compared to the deep reddish-orange color of non-treated controls. The treatment did not affect total soluble solids or acid content of fruit.

Mohamed Ismail
Florida Dept. of Citrus
Lake Alfred

NEW FACULTY MEMBER

Dr. Ed Echeverria joined the Postharvest Technology Working Group at the Citrus Research and Education Center, Lake Alfred. Ed is originally from Puerto Rico, is single and earned his Ph.D. from the Botany Department, University of Florida in 1983. He was a post-doctoral fellow for two years in the Department of Horticulture, Pennsylvania State University working on carbohydrate metabolism.

His research interests include the enzymatic control of reserve carbohydrates and their cellular compartmentation, the mechanisms and kinetics of sugar transport through different membrane systems, and the effect of some genetic, environmental and physiological factors on the metabolism of various saccharides and organic acids. Dr. Echeverria adds laboratory expertise to the Postharvest Group.

VISITING SCIENTIST

Dr. Kalman Peleg, Israel Institute of Technology, is working with Dr. Bill Miller at Lake Alfred. Kalman is living in Winter Haven with his wife and two children. They moved to this area following a temporary assignment at M.I.T. (Massachusetts Institute of Technology).

Dr. Peleg's work in Israel covered many areas and included fruit packing patterns, packages and using computers to integrate the operations of packinghouses. His work at Lake Alfred is to develop multiple sensor grading, researching both fruit handling mechanisms and computer data acquisition and control.

DRYER FUNDAMENTALS

Dr. Bill Miller has prepared a series of articles on Dryer Fundamentals for Packinghouse Newsletters. They will begin with Dewatering (before fruit drying). Other topics planned include Energy Sources, Energy Conservation Techniques, and Surface Drying Phenomena. The next issue of Packinghouse Newsletter will be devoted to Dewatering and associated operations.

Will Wardowski
Extension Service
Lake Alfred

CITRUS PACKINGHOUSE DAY

Thursday, September 4, 1986
Citrus Research and Education Center
Lake Alfred, Florida

Thursday? Yes, Thursday! We are responding to a reasonable request to move the meeting one day later giving more preparation time after Labor Day on Monday. Please mark your calendar for this 25th Annual meeting and join the expected 250 to 300 people interested in citrus packing. Talks and displays will be presented by scientists and citrus packers on a variety of timely topics.

Talks will be in the morning, followed by a lunch and afternoon equipment displays. Commercial companies are encouraged to reserve space by contacting W. Miller or W. Wardowski at the Citrus Research and Education Center.

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, and with the exception of having an equipment display, no advance registration is required. 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, Florida 33850

"Twenty-fourth annual Citrus Packinghouse Day" by CREC -- Lake Alfred, State of Florida -- Department of Citrus in Cooperation with Florida Citrus Packers. 1985.

"Biomechanics of fruits and vegetables" by Kalman Peleg. J. Biomechanics 18(11):843-862. 1985.

"Novel methods for analyzing multifactor postharvest data" by W. Grierson. Proc. Trop. Region A.S.H.S. 23:290-294. 1979.

"A review of Argentina's citrus canker control program with cost estimates for a similar program in Florida" by Ronald P. Muraro. Fla. Coop. Exten. Serv. Bul. 234. IFAS, Univ. of Fla., Gainesville. 1986.

"Florida citrus spray guide" by J. L. Knapp, D. P. H. Tucker and J. W. Noling. Fla. Coop. Exten. Serv. Circ. 393-L. 1986.

"Economic and statistical study of automatic weight-fill bagging machinery for fresh citrus in Florida" by W. M. Miller, R. P. Muraro and W. F. Wardowski. Amer. Soc. Ag. Eng. Paper No. 85-6513. 1985.

Available from AVI Publishing Co., Inc., 250 Post Road E.--P. O. Box 831, Westport, CT 06881

"Principles & Practices for Harvesting & Handling Fruits & Nuts" by M. O'Brien, B. F. Cargill and R. B. Fridley, editors. 1983. 20 Chapters. 652 pages. \$69.50 plus \$5.00 shipping & handling in USA.

"Produce Handling, Packaging & Distribution" by K. Peleg. 1985. 18 Chapters. 625 pages. \$135.00 plus \$7.00 shipping & handling in USA.

"Fresh Citrus Fruits" by W. F. Wardowski, S. Nagy and W. Grierson, editors. 1986. 22 Chapters. approx. 550 pages. \$65.00 plus \$5.00 shipping & handling in USA. (Contact editors for supply in Florida.)

Available from Dr. J. W. Eckert, Department of Plant Pathology, University of California, Riverside, CA 92521

"The chemical control of postharvest diseases: subtropical and tropical fruits" by J. W. Eckert and J. M. Ogawa. Ann. Rev. Phytopathol. 23:421-454. 1985.

Available from Dr. K. Kawada, Kagawa University, Miki-Tyo, Kagawa-Ken, Japan 761-07

"Deformation of 'Marsh' grapefruit as affected by fruit orientation at packing" by K. Kawada and H. Kitagawa. Proc. Fla. State Hort. Soc. 97:138-140. 1984.

Available from American Council on Science and Health, 47 Maple Street, Summit, NJ 07901

"Irradiated Foods" by K. A. Meister. 32 pp. Oct. 1982. Revised July 1985. \$2.00



Will Wardowski
Extension Service
Lake Alfred