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FLORIDA COOPERATIVE EXTENSION SERVICE

PACKINGHOUSE NEWSLETTER

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Key Word Index Abscission, Anthracnose, Benlate, Brown Rot, Decay Control, Degreening, Ethephon, Tangerines.

CONTROL OF BROWN ROT ON CITRUS FRUIT

Brown rot was found to be a factor in decay of some packed citrus fruit, especially Navel oranges, during the 1977-78 season. This type of decay is not controlled by fungicides applied after picking. Recommendations for control of brown rot are given in the Florida Citrus Spray Guide for 1978 which is available at your county extension office.

Generally the control recommendations consist of spraying with copper after the middle of August. Lower branches only need to be sprayed. Chopping of cover crops, hedging of trees and pruning off low-hanging branches will improve ventilation and reduce the likelihood of infection.

Brown rot looks similar to stem-end rot except that it may occur on any area of the fruit surface. Decay can spread by contact within a packed carton. If brown rot was suspected as a possible cause of increased decay last season, apply the recommended copper spray before harvest.

Andy McCornack and Eldon Brown
Florida Department of Citrus
Lake Alfred

ETHREL AND ANTHRACNOSE OF 'ROBINSON' TANGERINES

Ethephon (Ethrel) is a chemical that produces ethylene upon degradation. Ethrel is presently registered for use on mandarin-types of citrus to enhance preharvest color development and induce fruit loosening as an aid to harvest. Test results using Ethrel as an aid in the control of anthracnose (Colletotrichum gloeosporioides) is reported below.

Anthracnose is a serious decay of ethylene degreened 'Robinson' tangerines. In recent years, studies of the disease have been made to aid in the development of control measures. From these studies, we have learned how the fungus survives on the fruit, how it penetrates the peel, and the exposure of the organism to ethylene is required for extensive disease development. Severity of the disease increases when ethylene is used at concentrations in excess of 5 to 10 ppm during the degreening process. Also, we found that as the fruit develops more orange color, it is able to resist penetrations of the fungus during ethylene degreening. Since preharvest ethephon applications enhance fruit color, such applications are evaluated for the control of anthracnose.

Treatment[a]	% anthracnose of 'Robinson' tangerines
1975	
Ethephon (5 days)[b]	6.5
Control	23.2
Ethephon (7 days)	1.3
Control	11.0
1976	
Ethephon (7 days)	2.7
Control	17.8
1977	
Ethephon (6 days)	10.7
Control	25.5

[a]Fruit were degreened a minimum of 48 hours, and in some tests 67 hours were required for acceptable color. All fruit were treated with Benlate after degreening for decay control.

[b]Time applied before harvest.

Anthracnose was reduced each season with the use of ethephon as a preharvest treatment. The reduction in decay occurred even though relatively little difference in color change was evident at harvest time, particularly during the 1977 season. Ethylene, which accumulates within the fruit from Ethrel degradation, is apparently accelerating the development of the natural resistance mechanism to fungal penetration which is present in well-colored fruit. Development of the fungus on the fruit surface is not stimulated by ethylene from Ethrel since ethylene rapidly dissipates upon diffusion from the fruit.

Benlate is our most effective fungicide for anthracnose control and a drench before degreening is approximately 50% more effective than a post-degreening treatment. Combined preharvest applications of Benlate and Ethrel cause excessive leaf drop. A preharvest Ethrel spray combined with a postharvest drench of Benlate before degreening should be more effective than either alone for anthracnose control. Such studies are planned for this season.

We are not recommending that ethephon be used solely for anthracnose control. However, if you are considering the use of this material for color enhancement and fruit loosening, an additional benefit in the form of improved anthracnose control can be expected.

Eldon Brown
Florida Department of Citrus

Charles Barmore
Lake Alfred

In Memoriam

Mr. Marvin A. McNair, a top executive at Seald-Sweet Growers and former deputy director of the Florida Department of Citrus, died in Antwerp, Belgium of an apparent heart attack Thursday, August 17. The 54 year old citrus leader was on a business trip.

Mr. McNair was vice president in charge of administration and government affairs at Seald-Sweet. He served on the United States-Japan Citrus Industry Committee to negotiate Florida's dealings with Japan. He had been appointed by Robert Strauss, special U.S. trade representative. A Florida native born in Maitland, Mr. McNair was considered one of the more knowledgeable authorities on citrus law and regulations as well as industry operations. He had been involved in the citrus industry since 1942.

We have lost a very dear friend and a most valued employee. There is no one in the citrus industry that had the broad background and knowledge of all areas of our industry as did Marvin. Marvin was well liked and respected by our members, our customers at home and abroad, and even by competitors. He will be sorely missed by all of us.

His favorite comment when things were not running smoothly was that these are only challenges and opportunities. This will long be remembered at Seald-Sweet. I have been in the produce business for almost thirty years and can sincerely say Marvin was the most dedicated person to his company, his industry, and his family that I have ever known.

Don Lins
Executive Vice President
Seald-Sweet Growers
Tampa

Mr. McNair began as a fruit and vegetable inspector with the Florida Department of Agriculture and subsequently became chief of the department's citrus bond and license section. He moved to the Department of Citrus in 1963, was promoted to director of administration the following year, and became deputy director in 1973. He became a top executive at Seald-Sweet Growers in 1976.

His passing is a personal loss to me and certainly to our industry. I've known Marvin McNair for 14 years and worked directly with him here at the Department for 12 of those years.

He will be best remembered for putting the industry above individual considerations on the many issues he dealt with over the 36 years he was in citrus. He was outstanding as a troubleshooter in difficult technical and diplomatic areas.

His background, knowledge, and encouragement made him invaluable as a business associate. I'll miss him and this industry will miss him.

Edward A. Taylor
Executive Director
Florida Department of Citrus
Lakeland

AVAILABLE PUBLICATIONS

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

"Pallet boxes for Florida citrus" by W. F. Wardowski and W. Grierson. Univ. of Fla. Ext. Circ. 443. April 1978.

"Decay control of Florida citrus fruits with Imazalil" by A. A. McCornack and G. E. Brown. Proc. Fla. State Hort. Soc. 90:141-144. 1977.

Available from Dave Hall, P. O. Box 17477, Lockhart, FL 32810

"Packinghouse strategies for the control of fungicide resistant mold" by David J. Hall and John R. Bice. Proc. Fla. State Hort. Soc. 90:138-141. 1977.

Available from Mr. L. A. Risse, SEA, USDA, 2120 Camden Road, Orlando, FL 32803

"Rail transport of perishable commodities in Europe" by L. A. Risse, B. M. Hillebrand, A. J. Bongers and W. C. Chace, Jr. ARS-NE-96. 1978.

"Quality of grapefruit imported into Western Europe" by B. M. Hillebrand, L. A. Risse and A. J. Bongers. USDA, SEA, Market Res. Rpt. 1093. July 1978.

Available from Dr. Y. Levy, Agricultural Research Organization, Gilat Regional Experiment Station, Mobile Post Neger 2, Israel

"Influence of irrigation and environmental factors on grapefruit acidity" by Y. Levy, A. Bar-Akiva and Y. Vaadia. J. Amer. Soc. Hort. Sci. 103(1):73-76. 1978.

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

"Budgeting costs and returns: Central Florida citrus production, 1977-78" by R. P. Muraro and B. Abbitt. Univ. of Fla. Economic Information Report 88. July 1978.

"Budgeting costs and returns: Indian River citrus production, 1977-78" by R. P. Muraro and B. Abbitt. Univ. of Fla. Economic Information Report 91. July 1978.

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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.