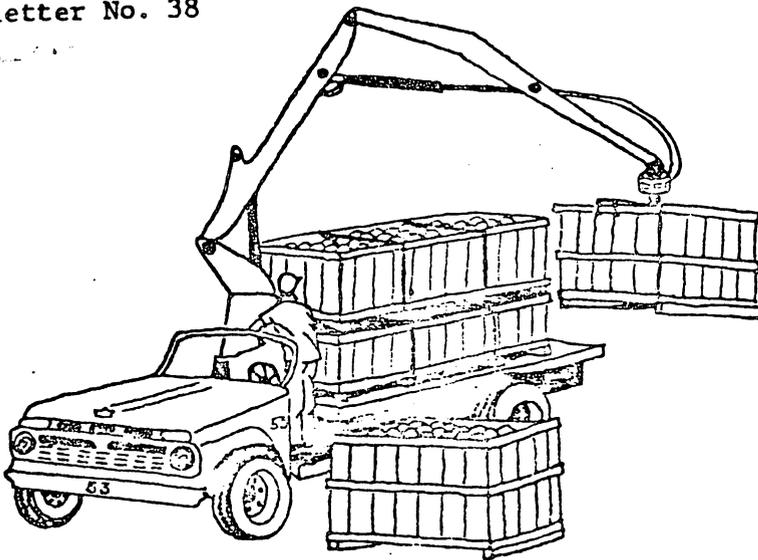


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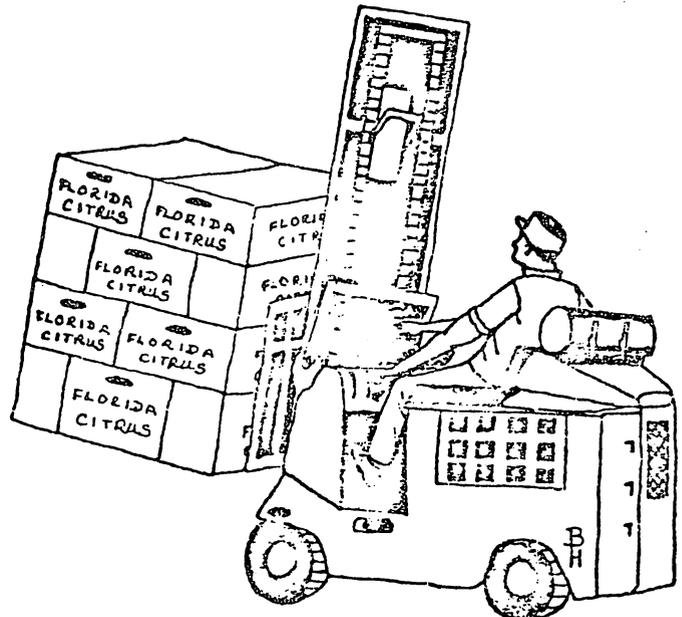
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# Packinghouse Newsletter

UNIVERSITY OF FLORIDA INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

and

STATE OF FLORIDA, DEPARTMENT OF CITRUS



\*Complimentary to members of the Florida Fresh Citrus Shippers Association. Others wishing to receive this newsletter may send a dozen stamped, preaddressed envelopes to the above address.

## 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

POSTHARVEST DECAY FUNGI OF CITRUS FRUIT

The citrus postharvest decay organisms are listed below in approximate decreasing order of importance for Florida citrus. However, an organism of relatively minor importance can, under certain conditions, cause the total loss of a particular crop or load. This list should serve as a guide for packers to identify the decay fungi.

Stem-end rot (*Diplodia natalensis*)

This is an economically important decay that occurs most frequently in ethylene-degreened fruit. Temperatures and humidities used in degreening are optimum for the growth of *Diplodia*. Decay usually originates at the stem end from latent hyphae present in necrotic tissues of the button surface.

Stem-end rot (*Phomopsis citri*)

Another important postharvest disease in which decay, similar to that caused by *Diplodia*, also originates from the button. *Phomopsis* develops more frequently in non-degreened fruit. This fungus also causes melanose.

Green mold (*Penicillium digitatum*)

A disease of extreme importance that develops more commonly in non-degreened fruit during the winter months when cool temperatures favor its growth. The degreening process tends to suppress the development of *Penicillium*. Infection from airborne spores occurs through injuries formed during picking or packing.

Sour rot (*Geotrichum candidum*)

A decay frequently found in specialty fruit. Since these fruit are utilized primarily in the fresh form, decay by *Geotrichum* is of concern. This fungus is more difficult to control with fungicides than any of the other decay fungi. Like green mold, injuries are necessary for infection from spores present on the fruit surface or packinghouse equipment. This organism will also spread from infected to healthy fruit in packed cartons.

Black rot (*Alternaria citri*)

Infection by this relatively unimportant decay organism can occur from either the stylar or stem end. Stylar-end infection can cause premature coloring primarily in navels, 'Jaffas', and tangelos. Stem-end infections are mainly confined to fruit held in long-term storage, such as 'Valencia' oranges held in cold storage for summer sale. Decay is often not detected until the fruit is cut to expose the rot in the core.

Anthracnose (*Colletotrichum gloeosporioides*)

A decay considered to be of minor importance which usually develops in overmature, freeze damaged, or sunburned fruit. However, the specialty varieties, 'Robinson', 'Lee', 'Nova', and 'Page', tend to be more susceptible to decay by *Colletotrichum*, especially when they are ethylene-degreened, than are round oranges.

Brown rot (*Phytophthora citrophthora*)

Brown rot is of minor importance and occurs most frequently on the East Coast. *Phytophthora* infections occur in the grove by direct fungal penetration of the peel of mature fruit during extended periods of continuous rainfall or high humidities. Like sour rot, decay can spread by contact during storage.

Blue mold (*Penicillium italicum*)

A decay of minor importance which infects and develops similarly to green mold. Normally, it is only observed on fruit stored for an extended period. This organism may also spread by contact during storage.

G. E. Brown  
Florida Department of Citrus  
Agricultural Research & Education Center

WHY SHOULDN'T THE MILKMAN DELIVER GRAPEFRUIT?

One of the few remaining conveniences of urban living is that the milkman still delivers milk to one's door. Moreover, he often delivers a number of things, most of them associated with breakfast. The milk in my own household is delivered by one of Florida's oldest dairies who are also owners of a very large citrus cannery; and I am sure many of the stockholders and executives are citrus growers. The monthly bill lists a formidable number of things that I can ask the milkman to leave. He can leave me milk, cream, yogurt, eggs in various sizes, single-strength juice, and so on.

This is normal enough for most dairies, but I have never heard of being able to put out a note for a quart of milk and three medium-sized grapefruit. Why doesn't somebody try it? It could even be considered in connection with the work we have already done on prepared grapefruit halves.

W. Grierson  
Agricultural Research & Education Center  
Lake Alfred

SAFETY PRECAUTIONS

Modern Materials Handling magazine for May, 1971, has a very worthwhile note on the hazards involved when operators of walkie-type pallet trucks ride on this equipment which normally provide no safe footing. This can result in a serious safety hazard.

Walkie-type pallet trucks are available with a safe place for the operator to ride in a standing position. Packinghouse operators purchasing walkie-type pallet handling equipment for use in tight places, loading trucks, etc. could well consider getting the "ride-on" type.

Earl Bowman  
TFRD/USDA/ARS  
Gainesville

CITRUS STATION SCHOLARSHIP FUND

In Newsletter No. 35 of February 1, we thanked the public-minded companies and individuals who contributed so generously to our scholarship fund to help us upgrade capable non-academic staff members. In that entry, we mentioned that George Good had, with the help of the scholarship fund, graduated from Florida Southern College with excellent grades, winning the award for the outstanding student in the Citrus Department.

I am sure that you will all be interested to hear that George has now not only received his promotion to the Department of Citrus staff as a "Chemist I", but also won a final award, the Hughes Award for an outstanding senior student, which was presented to him on graduation by Dr. A. E. Willson of Coca-Cola, Foods Division, Inc.

W. Grierson  
Agricultural Research & Education Center  
Lake Alfred

PACKINGHOUSE DAY PROGRAM ENCLOSED

The program for the Tenth Annual Packinghouse Day, September 8, 1971 is enclosed with this Newsletter. The program has been expanded by 1-1/2 hours to accommodate more presentations in a very busy schedule. Also, this year, there will be several pieces of equipment on display during the lunch period.

Editor

AVAILABLE PUBLICATIONS

Available from Harvesting & Handling Section, Agricultural Research and Education Center, P. O. Box 1088, Lake Alfred, Florida 33850.

"Effect of Mechanical Harvesting on Keeping Quality of Florida Citrus Fruit for the Fresh Market" by Robert L. Rackham and W. Grierson. HortScience 6(2): 163-165. April, 1971.

"Pycnidial Release and Survival of Diplodia natalensis Spores" (stem-end rot) by G. Eldon Brown. Phytopathology 61(5):559-561. May, 1971.

"Appendix I. Minimum Quality (Maturity) Standards for Oranges, Grapefruit, Tangerines, 'Temples', Tangelos, and 'Murcotts' as of June 30, 1970" An insert for Univ. of Fla. Agr. Ext. Ser. Circ. 315, "Quality Tests for Citrus Fruits."

Available from USDA,ARS,TFRD, 102 Agricultural Engineering Building, University of Florida, Gainesville, Florida 32601.

"Photoelectric Color Sorting of Vine-Ripened Tomatoes" by Jerome J. Gaffney and Otto L. Jahn. USDA MRR No. 868. 16 pages.

Available from Clark Equipment Company, Industrial Truck Division, 1921 Escote Street, Battle Creek, Michigan 49014.

"The Professionals: Rules for Safe Truck Driving", a cartoon-illustrated booklet designed to help avoid fork lift truck accidents.