

Newsletter No. 13

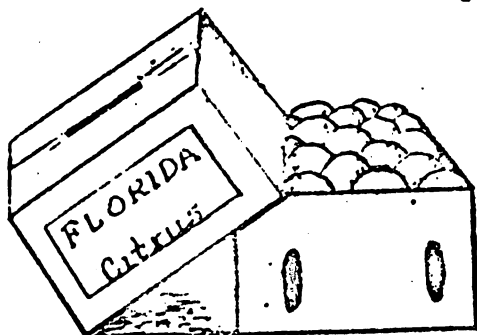
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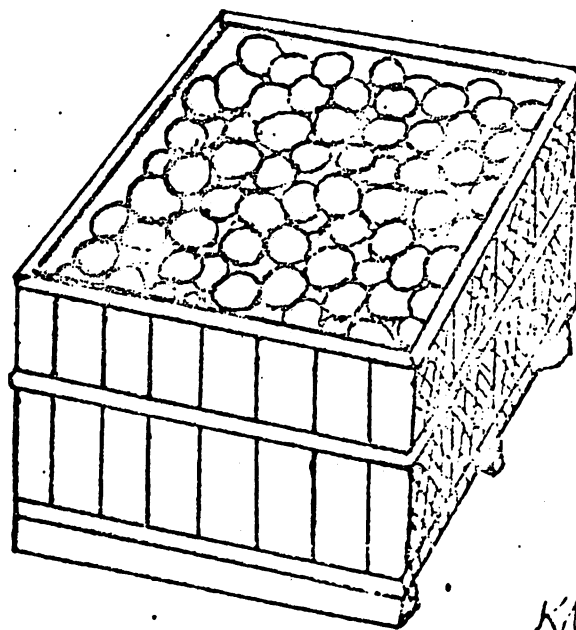
UNIVERSITY OF FLORIDA INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

and

FLORIDA CITRUS COMMISSION



Packinghouse Newsletter



Harvesting and Handling Section
University of Florida
Citrus Experiment Station
P.O. Box 1038
Lake Alfred, Florida, 33850

(Complimentary to members of the Florida Fresh Citrus Shippers Association.
Others wishing to receive this newsletter, 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

COMPLYING WITH THE FRESH FRUIT FUNGICIDE REGULATION

The Florida Fresh Citrus Shippers Association have requested that we write a brief review of the experience gained since the new citrus fungicide regulation became effective September 20, 1967. (Florida Citrus Commission Regulation 105-1.43).

There are no changes in the Citrus Experiment Station - Florida Citrus Commission recommendations for the use of citrus fungicides. Where problems have occurred in complying with this regulation, they have usually been due to lack of space in the packinghouse line or to improper application of fungicidal materials.

Recommendations

Degreecning - It is essential that fruit be in good condition. Fruit degreeced without humidity control are apt to develop peel injury which is accentuated by ANY treatment such as washing, fungicide application, color-adding, etc. This is also true of citrus fruit that have been held under drying conditions on trucks, receiving platforms, packinghouse floors, etc. (For further details see Extension Circular 286, May 1965, Practical Measures for Control of Stem-end Rind Breakdown of Oranges).

Dowicide Application - Our recommendation is for a recirculated Dowicide A-hexamine (Dow-hex) flood type system in which the fruit is wet with this solution for at least 1-1/2 minutes and then thoroughly rinsed. (For details of this method see Packinghouse Newsletters numbers 1, 6A, and 10, and the available literature listed in Newsletter No. 10. Copies of Newsletter No. 10 are still available from the Harvesting and Handling Section). The Dow-hex fungicidal treatment has been used and improved for 15 years. Other fungicidal treatments, particularly when applied under improvised conditions may cause problems. These can be solved if a few "DO's" and "DON'T's" are followed. Moreover, these recommendations are aimed at getting maximum decay control, rather than merely meeting the minimum requirements of the Fungicide Regulation.

DO

1. Keep the time between picking and fungicide application as short as possible. During this period protect the fruit from drying conditions.
2. Use the recommended fungicide concentrations. If using Dow-hex, follow the Citrus Experiment Station - Florida Citrus Commission recommendations. If using a proprietary product, follow the suppliers directions.
3. Make one employee responsible for checking the equipment and solution. The foreman should be familiar with the equipment and solution. It should be his responsibility to see that this employee is following instructions.

4. Have indicator papers for checking pH. The amount of residue and risk of peel injury are more closely related to pH of the solution than to concentration. pH values between 11.0 and 12.0 are desirable. As pH decreases below 11.0 danger of burn and excessive residues increases. Above pH 12.0 residues and decay control decrease and the treatment becomes ineffective.
5. Remove rots and splits from the packing line before the fungicide is applied. Broken fruit interfere with pH control of the fungicide solution. Decayed and split fruit can break the color-add emulsion, with consequent blotching and even fruit burn.
6. Allow enough time for the fruit to be wet with the fungicide solution for at least 1-1/2 minutes. If necessary, fruit can be 2 or 3 deep on a slow moving slat conveyor during the fungicide application.
7. A thorough rinse is necessary. The effective fungicide is chemically fixed in the cuts, scratches, plugs, etc., and will not rinse off.
8. Rinse washer brushes well immediately on shutting down for the day.

DON'T

1. Don't expect effective Dowicide treatment in less than 1-1/2 minutes.
2. Don't leave fruit in a soak tank filled with Dowicide or Dow-hex solution for more than 5 minutes. The tank should be cleared when shutting down for a break. This is a good practice even with flood applications.
3. Don't let Dowicide in any form carry over into the color-add tank. Except in minute quantities these two materials are not compatible.
4. Don't presume that raising the concentration will raise residue and vice-versa. Concentration and pH are closely interrelated and both must be watched.
5. Don't let water sprays and rinses dilute the fungicide solution. Isolate these with rubber curtains and separate drains.
6. Don't be content with meeting the minimum residue requirement. Aim for maximum decay control.
7. Don't expect miracles. All fruit are alive and will decay sometime. Correct use of fungicides can delay spoilage. Ship only fruit that are sound and have been well handled.