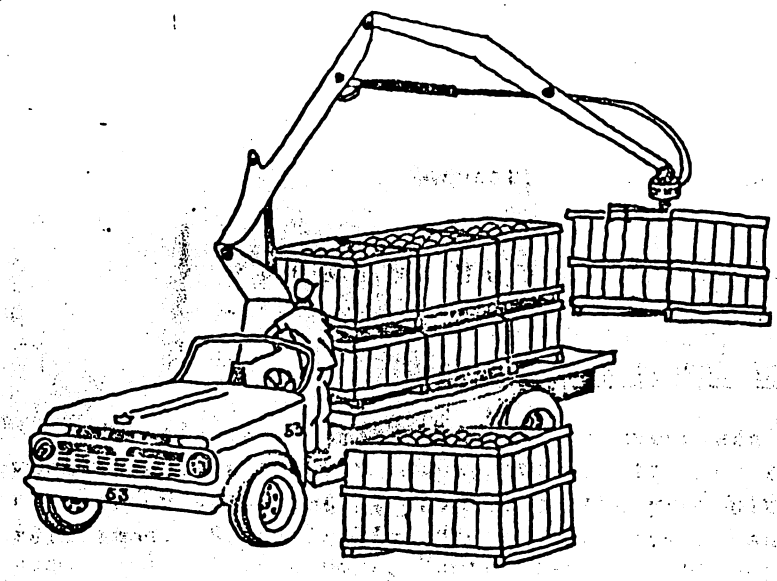
Newsletter No. 40

AREC-LA-71-44

October 15, 1971
850-WFW-Lake Alfred, Florida 33850



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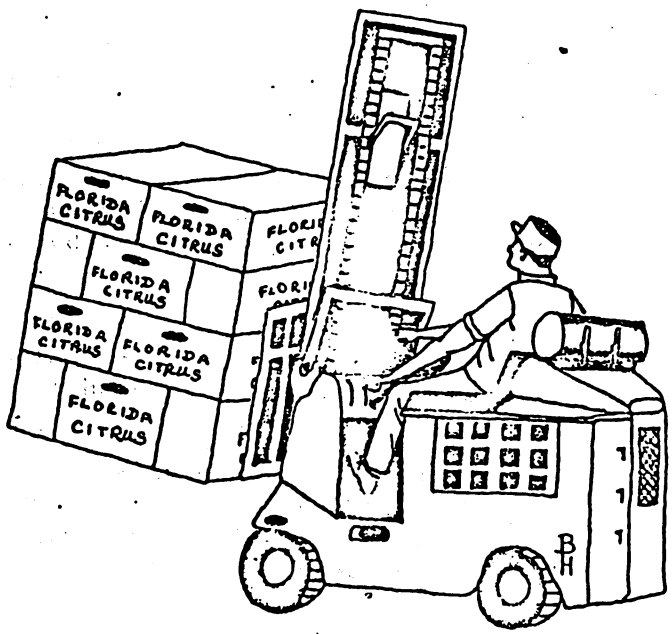
Packinghouse Newsletter

UNIVERSITY OF FLORIDA INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES

and

STATE OF FLORIDA, DEPARTMENT OF CITRUS

*Anyone wishing to receive this newsletter may send a dozen stamped, preaddressed envelopes to the above address.



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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

MECHANIZATION VERSUS AUTOMATION

"What's in a name?" said Will Shakespeare, "For a rose by any other name would smell as sweet." Maybe this is true of roses, but the whole modern science of semantics is devoted to the proposition that it is not true in human relations. Semantically, "automation" is a bad word, but "mechanization" is a good word. To the boss, "automation" means hope of a magic button that he will push and then go fishing. In the citrus industry, he will never get it; but meanwhile, its hoped-for prospect lures him into passing over needed, necessary, minor advances. To the worker, "automation" means that somebody wants to abolish his job and thus throw him out of work. He is naturally antagonistic and wants no part of it. "Mechanization" is the use of machines to extend the abilities of people. To the manager, it means a prospect of making his workers more productive, hence, more valuable. To the worker, it means a better way to do the job with the prospect of him being a machine operator rather than a laborer. The simple word "mechanization" gives a basis for dignified discussion and mutually advantageous planning for research worker, employer, and worker alike. Despite this, "automation" jars the eye or ear in every technical magazine, grower publication, or discussions such as those occurring in connection with our recent Packinghouse Day. Please let us mechanize together.

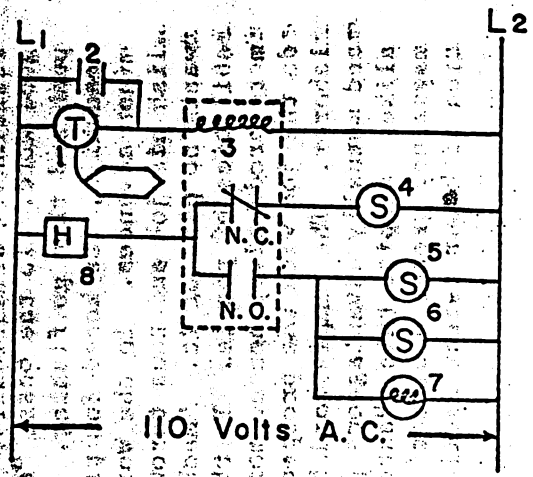
W. Grierson
Agricultural Research & Education Center
Lake Alfred

DEGREENING ROOM PNEUMATIC-WATER HUMIDIFICATION

Many packinghouses experience overheating problems with the degreening rooms early in the degreening season. This often occurs when no heat is required to attain the recommended 85°F temperature. Although this problem has always existed to some degree, it has become more common as more emphasis has been placed on better insulated degreening room construction. Some other factors contributing to this problem are (1) heat added through steam input necessary for keeping the humidity up, (2) exposed and uninsulated hot piping within the room, (3) high outside ambient temperatures, and (4) fruit temperatures above 85°F initially.

A water-spray humidification system can help to reduce this overheating problem. The heat added by steam humidification is eliminated. Also, for each pound of water vaporized at 85°F, 1045 Btu's of heat from the air is required tending to lower the air temperature slightly.

These pneumatic atomizing spray nozzles are being used successfully as the exclusive means of humidity control for several refrigerated Florida citrus storage rooms. This humidifying system has been installed on a trial basis in the Agricultural Research & Education Center, Lake Alfred, degreening rooms.



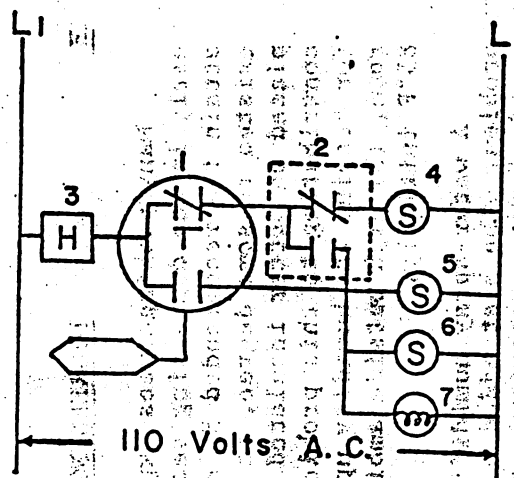
OPTION 1

1. Line voltage cooling thermostat - mercury switch or snap action type to minimize relay contact chatter and with 2 to 3°F adjustable or fixed differential.
2. Single pole single throw (SPST) switch for manually selecting the water humidification system if desired at temperatures below 85°F.
3. SPST relay (equivalent to Potter Brumfield KA5AG 120 VAC coil, 10 amperes contacts) and octal socket. N.C. (normally closed); N.O. (normally open)

*4. 120 VAC solenoid valve on steam humidifier line.

5. 120 VAC solenoid valve on air supply line.
6. 120 VAC solenoid valve on water supply line.
7. Pilot lamp indicator for water humidification system.

*8. On-off type humidistat control.



OPTION 2

1. Line voltage thermostat single pole double throw contacts with 2 to 3°F fixed or adjustable differential--mercury switch or snap action type to provide positive switching action.
2. Single pole double throw switch for manually selecting the water humidification system if desired at temperatures below 85°F.

*3. On-off type humidistat control.

*4. 120 VAC solenoid valve on steam humidifier line.

5. 120 VAC solenoid valve on air supply line.
6. 120 VAC solenoid valve on water supply line.
7. Pilot lamp indicator for water humidification system.

*These pieces of equipment are generally already installed for degreening rooms with automatic steam humidification systems.

Figure 1. Wiring diagrams for control to automatically switch from steam to water humidification, plus option of manual override to use water if desired at temperatures below 85°F.

This installation is designed to automatically switch the humidification from steam to water at temperatures above 85°F. Although no degreening has yet been carried out in this room, this system keeps the empty room humidity at the desired level. No water droplet fall-out can be detected. The necessary controls for automatically switching from steam to water are shown in Figure 1.

Both water and compressed air must be provided for this system. Two possibilities are available when installing this humidification system. Both air and water may be supplied under pressure or only air pressure can be supplied with water being supplied by suction from a reservoir. The double pressure system is recommended as opposed to the reservoir system, since the open reservoir is more likely to result in nozzle stoppages from mineral deposits and algae growth.

Based on limited experience, three atomizing nozzles per 1000 field boxes of fruit appears to be adequate. Spraying System's Company spray nozzle No. 26-B, or equivalent, should be used. Both air and water supply lines should be equipped with strainer, pressure regulator, and 120 VAC solenoid valve. Piping from strainers forward to the nozzle should be copper tubing.

Addresses for Pneumatic Atomizing Nozzle sources will be supplied upon request. Manufacturers, distributors, and dealers are urged to contact us to make a more complete list.

Douglas L. Deason
Agricultural Research & Education Center
Lake Alfred

PACKINGHOUSE IMAGE TO PICKERS

Roy Knowles, Harvesting Manager, Golden Gem Growers, told what a packinghouse looks like to harvesting crews in his presentation, "Harvesting Labor and Realism" at Packinghouse Day last month. That description is repeated for those who have requested it:

"To them, a packinghouse is a fickle monster who demands their services in frantic spurts--and doesn't give a hoot between spurts.

It's a monster who wants a lot of fruit before its ripe and WHEN it gets ripe--it turns its head and won't eat--UNLESS its--Xmas or raining!

When fruit is large--it wants little ones and when fruit is little--it wants big ones.

When fruit is all gone--its gets REALLY hungry and demands to know WHY-THERE-ISN'T-ANY-LEFT.

When all systems are GO--it gobbles up what we bring him--churns it around in his stomach--and with an angry--expensive snort--eliminates about half of it."

Editor

AVAILABLE PUBLICATIONS

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

"Program and Abstracts for Tenth Annual Packinghouse Day", Mimeo Report AREC-LA 71-32. September 8, 1971.

"Program and Abstracts for Twenty-Second Annual Citrus Processors Meeting", Mimeo Report AREC-LA 71-40. October 7, 1971.

"Hormonal regulation of citrus fruit and leaf abscission", by M. A. Ismail. 1970. Proc. Fla. State Hort. Soc. 83:256-259.

"The effects of post-bloom chemical sprays on grapefruit", by B. S. Buslig, R. D. Carter, G. E. Good, and J. A. Attaway. 1970. Proc. Fla. State Hort. Soc. 83:299-304.