



**INSTITUTE OF FOOD AND  
AGRICULTURAL SCIENCES**  
UNIVERSITY OF FLORIDA

**FLORIDA  
COOPERATIVE  
EXTENSION SERVICE**

## **PACKINGHOUSE NEWSLETTER**

W. Wardowski, Editor  
AREC  
P. O. Box 1088  
Lake Alfred, FL 33850  
Phone (813) 956-1151

Packinghouse Newsletter No. 98  
December 22, 1978

Key Word Index Color-add, Firmness of Fruit, Food & Drug Administration, Humidity, Labor, Machinery, Packers' Corner, Picking, Shape of Fruit, Trash Elimination

### PLEASE! NO BOUNCA DA GRAPEFRUIT!

Using stronger, and hence more expensive, cartons is not the only way to reduce current costly losses due to deformation of grapefruit during export shipments. In a series of experiments during the 1977-78 season, grapefruit were harvested under six sets of controlled conditions from tree to dumper. Careful picking, gentle handling, and high humidity during prepacking delays resulted in grapefruit that later resisted distortion. Rough picking, dropping, and delays under ambient humidity all contributed towards grapefruit that distorted easily. Such grapefruit are not only misshapen and unattractive on arrival, but they also develop dry, unpalatable flesh under the distorted areas.

The conclusions were striking. Mishandled, but apparently unblemished, grapefruit had severely impaired resistance to physical pressure such as is inevitable in transocean shipment.

Luis G. Rivero  
Escuela de Ingeniería  
Agronómica  
Universidad de Oriente  
Jusepin, Estado Monagas  
Venezuela

NOTE: Mr. Rivero conducted this research as a University of Florida, Fruit Crops Department graduate student studying for his master's degree.

I discussed these striking and clear cut research results with the late Marvin McNair shortly before his untimely death (PHNL #95, 29 August, 1978). Marvin summed it up in his usual pithy style: "It's simple, Doc; a grapefruit has only so much bounce and you can only use it up once!"

Bill Grierson  
AREC, Lake Alfred

**PACKERS' CORNER**TRASH ELIMINATOR WORKS

Would you believe there is a system that puts nearly all the leaves, sand and other unattached trash neatly into pallet boxes? Jim Ellis, General Manager, Lake Garfield Citrus Coop., invites you to visit and see for yourself. Jim has used ideas of others, plus some of his own. He has contracted some of the work and had his own employees build part of the system. The result is a system that works and the cost was less than a year's wages for the ex-trash collection man who is set free to do more productive work.

A metal plate has been installed under the dumper to catch leaves and sand falling from pallet boxes and to deliver this trash into a specially built ground-level pallet box rather than allow it to pile up under the machinery. This box needs to be emptied only once a day, occasionally more often on busy days.

Nearly all pallet box dumpers deliver fruit onto parallel rods allowing leaves and sand to fall through to the floor. Lake Garfield has installed a second metal plate as a steeply sloped metal chute under the parallel rods. The chute delivers the trash onto a belt where it is joined by the trash removed by a sloping belt trash eliminator (see Packinghouse Newsletter No. 39, September 1971). The sloping belt trash eliminator effectively removes all remaining loose trash, plus some split or badly damaged fruit. Attached stems or limbs commonly found later in the season are not removed, but Jim Ellis has some ideas about that problem too.

The trash moves on belts to an easily accessible pallet box protected from the wind by a shield. On the day of my visit, the second pallet box of trash was half full by noon. Removing this trash not only reduces damage to the fruit and minimizes the need for hand labor, but also reduces damage to packinghouse machinery.

Will Wardowski  
Extension Service  
Lake Alfred

HARVESTING: A SHORT LOOK AT A BIG PROBLEM!

Most people with experience will agree that fruit picking is a hard, dirty job with no prestige and low seasonal earnings.

Many will say that fruit pickers are over-paid and disloyal.

Evidence could prove either opinion.

On certain days a picker's earnings are very high.

However, we must consider the many hours lost in bargaining for the piece rate in each grove, the many hours lost on account of weather, equipment shortage, erratic demand (particularly packinghouse), and last but not least, the many hours of potential earnings lost because of the option the picker has of working, or not working.

The picker is a hard person to help - but we need to help him because we need more pickers and better performance.

Roy V. Knowles  
Golden Gem Growers  
Umatilla, Florida

FDA REJECTS CHARGES AGAINST "COLOR-ADDED"

Below are extracts from the Federal Register. The Commissioner of Food and Drugs rejected, and utterly demolished, the petition against Citrus Red No. 2 by the Ralph Nader related "Public Citizen Health Research Group." Readers studying the fine print below are invited to reflect on the fact that we scan hundreds of such pages every year on behalf of our fresh fruit industry.

Bill Grierson  
Will Wardowski  
AREC, Lake Alfred

FEDERAL REGISTER, VOL. 43, NO. 227—FRIDAY, NOVEMBER 24, 1978

[4110-03-M]

DEPARTMENT OF HEALTH,  
EDUCATION, AND WELFARE

Food and Drug Administration

[Docket No. 77P-0015]

COLOR ADDITIVES

Denial of Petition Proposing Revocation of Six  
Color Additive Regulations

AGENCY: Food and Drug Administration.

ACTION: Notice.

**SUMMARY:** This document announces the denial of a petition filed by the Health Research Group in which the revocation of the color additive regulations providing for the use of Citrus Red No. 2, FD&C Blue No. 1, Orange-B, FD&C Yellow No. 5, FD&C Red No. 3 and FD&C Red No. 40 was sought. The petition is being denied because it is not supported by adequate scientific evidence and is therefore legally inadequate as a basis for revocation of the color additive regulations for these colors.

CITRUS RED NO. 2

HRG states several major arguments in support of its proposed revocation of the regulation authorizing the use of Citrus Red No. 2.

1. HRG noted that Dr. Lehman, former Director, Division of Pharmacology, Food and Drug Administration (FDA), concluded in a memorandum dated June 25, 1958, that the color was a toxic substance.

The petitioner has misinterpreted the thrust of Dr. Lehman's statement and has failed to consider the state-

ment in light of the color Additive Amendments of 1960 (hereinafter called the Amendments)

Color additives are listed for use in foods today, however, under the provisions of the Color Additive Amendments of 1960. The Amendments, which became effective on July 12, 1960, explicitly authorize the listing of a potentially toxic color additive under safe conditions of use, by, for example, limiting the foods in which it may be used or establishing tolerances (i.e., maximum use levels). See 21 U.S.C. 376(b). The Amendments eliminated the "per se" approach in effect when Dr. Lehman wrote his memorandum and substituted an approach which permits tolerances to be established for color additives which are toxic at some level.

Dr. Lehman's memorandum, in addition to referring to citrus Red No. 2 as "toxic," stated that no-effect levels for this color were found to be 0.05 percent in rats and 50 mg/kg/day in dogs. This is the equivalent of 500 parts per million (ppm) in rats and 2,000 ppm in dogs.

In view of the no-effect levels for the color, Citrus Red No. 2 was listed under § 8.201 (21 CFR 8.201, now 21 CFR 74.302 pursuant to recodification) for limited use in coloring the skins of oranges at levels not exceeding 2.0 ppm of the color additive, calculated on the basis of the weight of the whole fruit. The regulation also limited the use of the color to mature oranges that were not intended for processing. Human exposure to the color is minimal because the colored oranges are not used commercially in the production of marmalade, and the household use of orange skins as food or as a food ingredient is minor. The amount of citrus Red No. 2 ingested

under practices prevailing in the United States would be, at most, a few parts per billion of the diet. Citrus Red No. 2 is considered to be safe when used in compliance with the requirements of § 74.302.

4. The HRG petition cites the opinions of the International Agency for Research on Cancer (IARC) and World Health Organization (WHO) concerning Citrus Red No. 2. Both IARC and WHO have based their opinions of Citrus Red No. 2 primarily on the study of Dacre (Ref. 3), which was discussed above. Neither organization examined Dr. Dacre's results in detail, nor did they examine the bladder slides—both relied mostly on the published report (Ref. 3). As discussed above, after exhaustively examining the merits of the Dacre study and after several unsuccessful attempts to obtain a final report of this study from Dr. Dacre, the Commissioner has concluded that it does not offer valid evidence of carcinogenicity.

This notice is issued under the Federal Food, Drug, and Cosmetic Act (secs. 701, 706, 82 Stat. 1055-1058, 74 Stat. 399-403 (21 U.S.C. 371, 376)) and under authority delegated to the Commissioner (21 CFR 5.1).

Dated: October 30, 1978

DONALD KENNEDY,  
Commissioner of  
Food and Drugs

[FR Doc. 78-32715 Filed 11-22-78; 8:45 am]

REFERENCES

3. Dacre, J. C., *Proceedings of the University of Otago Medical School*, 43:31-33, 1965.

GOVERNMENT REGULATION

EPA has fined a company \$3,000 for shipping air purifiers containing glycol because the air purifiers were "unregistered pesticides," according to EPA. The judge ruled that the purifier must be killing something and therefore must be a pesticide and be registered. (PTCN).

Chemically Speaking  
November 1978

AVAILABLE PUBLICATIONS

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

Proceedings of the Symposium: Relative Humidity — Physical Realities and Horticultural Implications. HortScience, Vol. 13(5):549-576. October 1978. This reprint includes:

"Introduction to the symposium" by W. J. Lipton

"Humidity: Basic principles and measurement techniques" by J. J. Gaffney

"Relative humidity as a factor in the structure and histochemistry of plants" by L. A. M. Baird and B. D. Webster.

"Role of water potential in microbial growth and development of plant disease, with special reference to postharvest pathology" by R. J. Cook and R. I. Papendick.

"High humidity storage of vegetables and fruits" by L. van den Berg and C. P. Lentz.

"Relative humidity effects on the postharvest life of fruits and vegetables" by W. Grierson and W. F. Wardowski.

Available from Dr. O. L. Jahn, FRSEA, USDA, 2120 Camden Road, Orlando, FL 32803

"Ethephon-induced defoliation patterns and subsequent yields in citrus" by C. C. Morton, O. L. Jahn, R. H. Young and R. H. Biggs. Journal Amer. Soc. Hort. Sci. 103(5):670-673. 1978.

Available from Dr. T. L. Davenport, AREC, 18905 SW 280th Street, Homestead, FL 33031

"Fruit turgor influences susceptibility of 'Tahiti' lime to stylar-end breakdown" by G. A. P. da Cunha, T. L. Davenport, J. Soule and C. W. Campbell. Journal Amer. Soc. Hort. Sci. 103(5):622-625. 1978.



W. Wardowski, Editor  
Associate Professor-  
Extension Horticulturist

This newsletter is published at a cost of \$77.70 or 6 cents per copy, to give the latest news to the packinghouse industry