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PACKINGHOUSE NEWSLETTER

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Residue Tolerance, SOPP, Thiabendazole.

INTERNATIONAL CITRUS POSTHARVEST FUNGICIDE TOLERANCES

Any country's national policy concerning pesticide residues in foods reflects the inputs of many interests, namely, pesticide industry, agricultural producers, public health authorities, consumer and environmental groups, the scientific community and other concerned parties. Variations in national policy become crucial when international trade in food commodities is involved. Ideally, exporting and importing nations would permit the same pesticide, and at the same tolerance limit, for a specific food commodity. This is seldom the case, and the exporter must abide by the importing regulations.

Regulation of pesticide levels on a major food commodity of international trade, for example citrus, is a complex problem. Existing international activities in this field have been through the work of the joint FAO/WHO Committee on Pesticide Residues and the Codex Committee on Pesticide Residues of the Joint FAO/WHO Food Standards Program. These committees strive to develop guidelines for good agricultural practices in the use of pesticides, to acquire information on the toxicology of pesticides, and to recommend maximum permissible levels for pesticide residues in or on a food commodity. While many countries accept the recommendations of these international committees, many do not. The establishment of a uniformly acceptable pesticide tolerance limit for citrus fruit is an elusive goal.

Packers exporting citrus fruit must be aware of changing legislation in those countries where their fruit is consumed. Failure to keep abreast of the importing country's permissible postharvest pesticides, and their residue limits, might result in condemnation of the shipment by public health authorities.

Florida citrus packers must apply at least one of five fungicides and the fruit must have a minimum tolerance for one of the fungicides as specified by Chapter 20-33, Florida Department of Citrus Rules. Fruit is sampled and analyzed to assure that the rule is followed. The rule reads in part,

CITRUS POSTHARVEST FUNGICIDE TOLERANCES

Country	Fungicides ^z						
	2-A,B	Benomyl	2,4-D	Diphenyl	Imazalil	SOPP	TBZ
	ppm						
USA	30	10	5	110	10 ^x	10	10
FAO/WHO(Codex)	30 ^x	10 ^w	2	110	5 ^x	10	10
Australia	30	10 ^x	5	110		20 ^x	10
Austria		7 ^v		70		12	6
Belgium ^y				70	5	12	6
Canada		10	2	110		10	10
Denmark ^y		10		70	5	12	6
Finland				70	5	10	6
France ^y		1.5 ^u		70	5	12	6
Germany, West ^y	30	7 ^v	2	70	5	12	6
Hong Kong				100		70	
Ireland ^y				70	5	12	6
Italy ^y		0.5 ^t		70		12	6 ^s
Japan		0		70		10	10
Luxembourg ^y				70		12	6
Netherlands ^y (Holland)	30	3.5 ^v		70	5	12	6
New Zealand	30	5	5	110	5	10	3
Norway				70	5	10	6
Poland				110		10	10
Portugal						12	6
S. Africa, Rep. of	5	5		0		0	6
Spain				0	2	12	6
Sweden	30	10	2	110	5	10	6
Switzerland		7 ^v		70	5	12	6
United Kingdom ^y (Britain)			2	70		12	10
	mg/kg body weight						
ADI ^f (FAO/WHO)	0.2	9		.125	0.01	1.0	0.3

FOOTNOTES:

^z2-A,B = 2-aminobutane or sec-butylamine. Benlate = benomyl. 2,4-D = alkanolamine salts of 2,4-Dichlorophenoxyacetic acid. Diphenyl = biphenyl. Imazalil = decozil. SOPP = sodium o-phenylphenate with residues expressed as o-phenylphenol. TBZ = thiabendazole.

^yMember of the European Economic Community (EEC).

^xTemporary tolerance.

^wCodex Guideline level.

^vExpressed as methyl 2-benzimidazolecarbamate (MBC).

^uIf treated with benomyl, treatment with another fungicide prohibited.

^tRegistered for preharvest use only.

^s3 ppm maximum allowed if used with other fungicides.

^rAcceptable daily intake.

^qNot determined.

"The residue of fungicides...in the whole citrus fruit shall be not less than 0.5 ppm of sodium o-phenylphenate, expressed as o-phenylphenol, or 0.1 ppm of thiabendazole, or 0.1 ppm of benomyl, or 0.5 ppm of sec-butylamine (2-aminobutane). When diphenyl (biphenyl) is used, the total content shall be not less than 2 grams (1 pad or equivalent) per 4/5 bu. container or the equivalent in other sized containers." For Florida citrus, fungicide residues must be between the State minimum and the maximums in the table.

The table of citrus postharvest fungicide tolerances on the preceding page is a revision of one that appeared in Packinghouse Newsletter No. 96, September 1978. It includes the following changes.

1. New Zealand, Poland, Republic of South Africa and FAO/WHO.
2. Imazalil and 2,4-D tolerances.
3. FAO/WHO acceptable daily intake values.
4. Removal of the 100% rule by Finland.

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CITRUS PACKINGHOUSE DAY

Wednesday, September 9, 1981

Agricultural Research & Education Center

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AVAILABLE PUBLICATIONS

Available from Dr. W. Wardowski, AREC, 700 Experiment Station Road, Lake Alfred, FL 33850

"Packinghouse Newsletter Index" for issues 1-119.

"Postharvest decay control recommendations for Florida citrus fruit" by A. A. McCornack, W. F. Wardowski and G. E. Brown. Fla. Coop. Ext. Serv. Circ. 359-A. February, 1976.

"International pesticide tolerances for citrus" by Steven Nagy and Will Wardowski. Florida Grower & Rancher 73(1):18-19. January 1980.

"Marketing of Florida grapefruit in Japan" by H. Kitagawa and K. Kawada. Proc. Fla. State Hort. Soc. 92:241-245. 1979.

"Application of benzimidazole fungicides for citrus decay control" by G. E. Brown. Proc. Int. Soc. Citriculture. 1:273-277. 1977.

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

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

"Containers in common use for selected fresh fruits and vegetables exported to Western Europe" by Anton J. Bongers, Ben M. Hillebrand and Larry A. Risse. Marketing Research Report No. 1114. April 1981.

Available from Dr. B. A. Davé, Penwalt Corporation, P. O. Box 120, Monrovia, CA 91016

"The isolation of Penicillium digitatum sacc. strains tolerant to 2-AB, SOPP, TBZ and Benomyl" by B. A. Davé, H. J. Kaplan and J. F. Petrie. Proc. Fla. State Hort. Soc. 93:344-347. 1980.

This newsletter is published at a cost of \$110.67 or 9 cents per copy, to give the latest news to the packinghouse industry.

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