

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OPTS-OPP OFSD-Chemical & Biological Investigations

5-1-81

DATE: May 1, 1981

SUBJECT: PP #OE2414. Iprodione on Kiwi Fruit

FROM: Calvin Corley, Method Evaluation Unit, CBIB, BFS (TS-768)

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Thru: R. W. Storherr, MTU, CBIB
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R.W.S.

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Methods Trial was requested by Chemistry Branch, Hazard Evaluation Division, on the fungicide Iprodione, 3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4 dioxo-1-imidazolidine carboxamide, and its metabolites, 3-(1-methylethyl-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidine carboxamide and 3-(3,5-dichlorophenyl) 2,4-dioxo-1-imidazolidine carboxamide, on Kiwi fruit. Fortification levels for each compound were requested at 0, 0.01 and 7.0 ppm. The petitioner's method, "Fungicides: Iprodione, 30228 R.P. and 32490 R.P. Analytical Method for the Determination of Residues in Kiwi Fruit," dated September 1980 was to be followed. Iprodione is a product of Rhodia Inc. The method appears satisfactory.

Method Summary:

Iprodione and two metabolites are extracted from Kiwi fruit by blending with 200 ml of acetone for two minutes. The mass is filtered with the aid of a vacuum; filter cake is re-blended with an additional 200 ml of acetone. Ten ml of pH 7 buffer is added to extract and the solvent is removed on a rotary evaporator under vacuum at 35°C until aqueous residue remains. The aqueous residue is transferred to a 500 ml separatory funnel and extracted with 3-100 ml portions of methylene chloride. The methylene chloride extract is evaporated to dryness and the residue is dissolved in 20 ml of toluene. A 2 ml aliquot of extract is evaporated and methylene chloride added for chromatography on 6 gram Florisil. The Florisil column is eluted with 35 ml 3% v/v ethyl acetate in methylene chloride. This first fraction, Fraction #1, contains iprodione and one of the metabolites 30228. Fraction #2 - the column is further eluted with 100 ml of 50% v/v ethyl acetate in methylene chloride. This eluate contains the second metabolite 32490. Determination of iprodione and metabolites was accomplished using two GLC columns with electron capture detection. The gas chromatograph was operated using the following parameters:

Instrument: Tracor 560 equipped with an electron capture detector.

Columns: Glass (2 m X 2 mm ID) containing 10% w/w OV-210 on Gas Chrom Q, 80-100 mesh.

Glass (2 m X 2 mm ID) containing 5% w/w OV-17 on Gas Chrom Q, 80-100 mesh.

Temperatures: Iprodione and 32490 R.P. Column OV-210.
Oven 230°C Injection 240°C Detector 300°C

30228 R.P. Column OV-17.
Oven 160°C Injection 220°C Detector 300°C

Flow rates: 100 ml and 80 ml nitrogen

No difficulty was experienced in applying procedures. A set of two samples takes approximately 6 hours. The method is suitable for regulatory purposes.

Suggestion on Method:

In the step, "Partition of Iprodione, 30228 R.P. and 32490 R.P. into Dichloromethane," under paragraph 2.6.5, do not evaporate the dichloromethane; just concentrate it to 20 ml volume and eliminate the toluene step entirely.

Copies to:

K. Kissler	MT file (Bradley)*
G. Makhijani	Petition file*
C. Corley	FDA (P. Corneliussen)*
K. T. Zee	Ribbon copy*
R. W. Storherr	

* Asterisk marked to go to CB, HED.

Results:

Iprodione, 30228 R.P. and 32490 R.P. recoveries from Kiwi fruit

Compound	ppm Fortification	ppm Recovered	%
Iprodione	0	0.0	
"	0	0.0	
"	.01	.007	70
"	.01	.007	70
"	7.0	6.6	94
"	7.0	6.8	97
30228 R.P.	0	0.0	
	0	0.0	
	.01	.007	70
	.01	.006	60
	7.0	6.0	88
	7.0	6.1	87
32490 R.P.	0	0.0	
	0	0.0	
	.01	.006	60
	.01	.006	60
	7.0	6.0	88
	7.0	6.2	89