



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 25 1988

RF
4-25-88

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: PP6F3443. Iprodione on Rice and Rice Straw. MRID No. 404892-07. RCB # 3412, 3413. Submission of 1/27/88. Residue data for aerial application to rice.

FROM: R. W. Cook, Chemist *RWCook*
Tolerance Petition Section I
Residue Chemistry Branch,
Hazard Evaluation Division (TS-769C)

THRU: Charles L. Trichilo, Chief
Residue Chemistry Branch
Hazard Evaluation Division (TS-769C)

TO: L. Rossi, PM 21
Herbicide/Fungicide Branch
Registration Division (TS-767C)

and

Toxicology Branch,
Hazard Evaluation Division (TS-769C)

DEFICIENCIES REMAINING TO BE RESOLVED:

1. Propose higher poultry and egg tolerances.
2. Impose label restriction against catfish and crayfish farming in treated rice fields.

RECOMMENDATIONS:

We recommend against the establishment of the proposed tolerances for residues of iprodione RP26019 and its isomer RP30228 and its metabolite RP32490 in rice. Existing tolerance levels are not adequate to cover expected residues of iprodione, its isomer, and its metabolite.

The petitioner should propose tolerance levels adequate to cover expected residues of iprodione, its isomer, and its metabolite in poultry meat and meat byproducts, poultry fat, poultry liver, and eggs.

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The petitioner should impose a label restriction against catfish and crayfish farming in treated rice fields.

CONCLUSIONS:

Deficiencies #1, #2, #3, and #7 have been resolved in the current submission.

Deficiency #8 has not been resolved; a catfish and crayfish farming restriction needs to be imposed.

Combined residues of iprodione and its isomer and its metabolites are not likely to exceed the established tolerances for residues of iprodione and its hydroxylated and nonhydroxylated metabolites under 180.399 (b) in milk at 0.5 ppm; meat, fat, and meat byproducts of cattle, goats, hogs, horses, and sheep at 0.5 ppm.

Combined residues of iprodione and its isomer and its metabolites are not likely to exceed the proposed tolerance levels of 10 ppm in rice and 20 ppm in rice straw from the use as proposed herein.

Combined residues of iprodione and its isomer and its metabolites are likely to exceed the established tolerances in poultry meat and meat byproducts, poultry liver, poultry fat, and eggs. The petitioner should propose tolerance levels adequate to cover expected residues in poultry meat and meat byproducts, poultry liver, poultry fat, and eggs.

DISCUSSION:

In our previous review of subject petition, see memo of 9/8/87, R. W. Cook, several outstanding deficiencies were noted. We shall repeat the previous deficiency, using the Deficiency number previously recorded. We shall then give the petitioner's response, and finally, RCB comments and conclusions.

Deficiency #1:

Additional residue data reflecting label instructions for aerial application are needed. Major rice production areas must be represented: Arkansas, Louisiana, Mississippi, Texas, and California.

Petitioner's Response:

The petitioner now submits the requested additional data, representing Arkansas, Louisiana, Mississippi, Texas, and California.

Our Comments or Conclusions:

See our comments on the submitted residue data under Detailed Considerations below.

Deficiency #2:

Additional information on the manner and method of sampling should be provided. We question whether representative samples of rice grain and straw can be gathered from combine or hopper after combining plots as small as 4 x 20 foot. Further, we do not believe a single sample analysis is adequate representation for each location. Replicate samples should be obtained and duplicate analysis conducted.

Petitioner's Response:

Although the petitioner has not directly addressed this deficiency, the submitted residue data are better described in terms of manner and method of sampling.

Our Comments or Conclusions:

This deficiency is resolved in the current submission.

Deficiency #3:

The label prohibition against use on California rice is not practical. Additional residue data reflecting aerial application on California rice are needed. Alternately, a persuasive argument that the label prohibition is practical may be submitted.

Petitioner's Response:

The petitioner submits the requested residue data reflecting aerial application to California rice.

Our Comments or Conclusions:

The submitted residue data for California rice are reviewed below under Detailed Considerations.

Deficiency #7:

The petitioner should propose an appropriate feed additive tolerance for rice bran.

Petitioner's Response:

The petitioner has submitted in previous submission, a feed additive tolerance for rice bran at 30 ppm for combined residues of iprodione RP26019 and its isomer RP30228 and its metabolite RP32490, based upon 3X concentration factor from rough rice to rice bran.

Our Comments or Conclusions:

In our previous review, we were unable to draw any conclusions on the adequacy of the feed additive tolerance, since we do not have adequate residue data reflecting aerial application in several states. Based upon the submitted residue data, we are able to conclude that 30 ppm is an appropriate feed additive tolerance for rice bran.

Deficiency #8:

The petitioner should be advised to add the following "Do not apply in areas where catfish and crawfish are commercially cultivated."

Petitioner's Response:

The petitioner has not responded to our comment. RD has not included a copy of the proposed label.

Our Comments or Conclusions:

Deficiency #8 has not been resolved; a catfish and crayfish farming restriction needs to be imposed.

DETAILED CONSIDERATIONS:

Residue data are presented from 16 trials in 5 states: AR, LA, MS, TX, CA. All the currently submitted field trials were conducted using aerial application equipment, as requested in our previous review. Sampling methods and manner are adequately described.

Residues of Iprodione in Rice and Rice Straw.

		Residue (ppm)					Calc.
		Corrected for Recovery					
<u>Location</u>	<u>Lb/AI</u>	<u>Days</u> <u>After</u>	<u>RP26019</u>	<u>RP30228</u>	<u>RP32490</u>	<u>TOTAL</u>	
<u>Rice Straw</u>							
AR	1 (WP)	28	0.73	2.11	0.25	3.09	
CA	1 (WP)	32	0.34	0.30	<0.05	<0.69	
MS	1 (WP)	35	0.55	1.18	0.75	2.48	
MS	1 (F)	35	0.56	0.94	0.89	2.39	
AR	1 (WP)	36	0.15	0.70	0.22	1.07	
AR	1 (F)	36	0.63	0.75	0.18	1.56	
MS	1 (WP)	37	<0.05	0.08	<0.05	<0.18	
TX	1 (WP)	37	0.31	0.35	0.07	0.73	
LA	1 (WP)	37	0.91	2.88	0.22	4.01	
LA	1 (F)	37	0.86	0.93	0.21	2.00	
LA	1 (F)	38	0.60	0.56	0.15	1.31	
MS	1 (WP)	39	0.52	1.29	<0.05	<1.86	
MS	1 (WP)	42	0.42	1.57	1.04	3.03	
MS	1 (F)	42	0.42	0.80	1.05	2.27	
LA	1 (WP)	44	0.77	1.23	0.14	2.14	
<u>Rice Grain</u>							
AR	1 (WP)	28	0.70	0.25	0.14	1.09	
CA	1 (WP)	32	0.24	0.05	<0.05	<0.34	
MS	1 (WP)	35	0.24	<0.05	<0.05	<0.34	
MS	1 (F)	35	0.15	<0.05	0.05	0.25	
AR	1 (WP)	36	0.09	0.68	<0.05	<0.82	
AR	1 (F)	36	0.08	0.86	<0.05	<0.99	
LA	1 (WP)	37	0.73	0.24	0.09	1.06	
TX	1 (WP)	37	0.20	0.07	<0.05	<0.32	
LA	1 (F)	37	0.36	0.21	0.05	0.62	
LA	1 (WP)	38	0.07	0.07	<0.05	<0.19	
LA	1 (F)	38	0.13	0.10	0.10	0.33	
MS	1 (WP)	39	0.41	0.10	<0.05	<0.56	
MS	1 (WP)	42	0.19	0.11	<0.05	<0.35	
MS	1 (F)	42	0.18	0.19	<0.05	<0.42	
LA	1 (WP)	44	0.68	0.45	<0.05	<1.18	

Based upon this data, we are able to conclude that residues of iprodione (RP26019) and its isomer (RP30228) and its metabolite (RP32490) will not exceed the proposed tolerance levels in the raw agricultural commodities rice and rice straw.

RESIDUES IN MEAT, MILK, POULTRY AND EGGS:

Tolerances for residues of iprodione and its hydroxylated and nonhydroxylated metabolites under 180.399 (b) are established at the following levels: milk at 0.5 ppm; meat, fat, and meat byproducts of cattle, goats, hogs, horses, and sheep at 0.5 ppm;

poultry meat and meat byproducts 0.4 ppm; poultry fat at 2 ppm; poultry liver at 3 ppm; and eggs at 0.8 ppm.

LIVESTOCK

Rice straw is used to a maximum of 10 percent in the diet of beef cattle, and not used by poultry or swine. Rice grain with hulls and milling byproducts as hulls and bran are used in the diet of both beef and dairy cattle to the extent of 25% of the diet, while in poultry these feeds are used to 40 percent in turkeys or broilers and to 20 percent in the diet of laying hens.

In previous considerations (M. F. Kovacs, 10/25/83, PP2F2728) in cattle fed 200 ppm of iprodione for 28 days, maximum residues were 0.389 ppm (of total hydroxylated and non-hydroxylated metabolites) in milk at 17 days. Maximum residues of nonhydroxylated metabolites were 0.13 ppm in muscle, 0.52 ppm in fat, 2.87 ppm in beef kidney, and 1.95 ppm in liver.

Dietary Burden in Livestock

Beef Cattle	Rice Straw	10% X 20 ppm = 2 ppm
Dairy Cattle	Rice Grain	25% X 10 ppm = 2.5 ppm
Dairy Cattle	Rice Bran	25% X 50 ppm = 12.5 ppm

Thus, the maximum dietary burden in cattle (either beef or dairy) would be 12.5 ppm. Based upon these values, combined residues of iprodione and its isomer and its metabolites are not likely to exceed the established tolerances in milk at 0.5 ppm; meat, fat, and meat byproducts of cattle, goats, hogs, horses, and sheep at 0.5 ppm.

POULTRY

In previous considerations (M. F. Kovacs, 10/25/83, PP2F2728), maximum residues of iprodione and its non-hydroxylated metabolites in poultry muscle tissue at 28 days were <0.05, 0.32, and 1.68 ppm at the 2, 20, and 100 ppm feeding levels. Comparable residues in fat were 0.18, 2.57, and 8.62 ppm, respectively. Residues in liver were 0.61, 4.10, and 13.4 ppm and in kidney were 0.33, 2.30 and 6.87 ppm, respectively.

In eggs, the 2 ppm feeding level resulted in maximum detectable residue of 0.137 ppm at 7 through 28 days of feeding. At the higher feeding levels of 20 and 100 ppm, the maximum detected residues were 0.75 and 2.17 ppm, respectively. During depuration, residue levels fell to <0.01 ppm at the two lower feeding levels within 9 days of withdrawal, and at the highest feeding level, to <0.01 ppm within 12 days of cessation of dosing.

Dietary Burden in Poultry

Turkey/Broilers	Rice Hulls	40% X 50 ppm = 20 ppm
Turkey/Broilers	Rice Grain	40% X 10 ppm = 4 ppm
Laying Hens	Rice Hulls	20% X 50 ppm = 10 ppm
Laying Hens	Rice Grain	20% X 10 ppm = 2 ppm

Iprodione Poultry Feed Items

<u>Feed Items:</u>	<u>Tolerance</u> ppm	<u>Turkey</u>		<u>Laying Hens</u>	
		%	ppm	%	ppm
Grape Pomace Dry	225	5	(11)	5	(11)
Peanut Meal	0.5	10	(0.05)	10	(0.05)
Peanut Soapstock	10	5	(0.5)	5	(0.5)
Rice Hulls	50*	40	(20)	20	(10)
Rice Grain w/Hulls	10*	40	(4)	20	(2)
* Proposed herein.					
Estimated Burden			(35.5)		(23.5)

For poultry the maximum burden would be 24 ppm in the diet of turkeys and broilers from rice grain (4 ppm) and rice hulls (20 ppm). For laying hens, the maximum burden would be 12 ppm from rice grain (2 ppm) and rice hulls (10 ppm). Considering an unlikely diet and further assuming the consumption of a diet of 40% rice hulls and 40% rice grain with hulls, the dietary burden could be as high as 35.5 ppm in turkeys and broilers and 23.5 ppm in laying hens.

Based upon these values, combined residues of iprodione and its isomer and metabolites are likely to exceed the established tolerances in poultry meat and meat byproducts, poultry liver, poultry fat, and eggs. The petitioner should propose a tolerance level adequate to cover expected residues in poultry meat and meat byproducts, poultry liver, poultry fat, and eggs.

INTERNATIONAL TOLERANCES:

International residue status of iprodione on rice was considered in our previous review which see.

cc: S.F., R.F., PP6F3443/6H5507, R.W.Cook, PMSD(ISB),TOX.
TS-769C:RCB:Reviewer:RWCook:rcw:4/22/88:Rm810H:CM2:5577324.
RDI:Section Head:RSQuick:4/22/88:RDSchmitt:4/22/88.