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

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

Subject: PP# 4G3037. Iprodione on peanuts. Evaluation of analytical methods and residue data. Accession # 072326 and # 072325.

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Rhone-Poulenc Inc. requests an EUP for the fungicide iprodione [3-(3,5-dichlorophenyl)-N-(1-methyl ethyl)-2,4-dioxo-1-imidazolidinecarboxamide], its isomer [3-(1-methyl ethyl)-N-(3,5dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide] and its metabolite [3-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide] on peanuts at 0.1 ppm in nut meat, 110.0 ppm in hay, and 5.0 ppm in hulls.

Tolerances have been established for iprodione and its metabolites 3-(1-methylethyl)-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide and 3-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide on apricots, cherries (sweet and sour), nectarines, peaches, plums, and prunes at 20 ppm; kiwi fruit at 10 ppm, almond hulls at 0.25 ppm, almond meat at 0.05 ppm, and garlic at 0.1 ppm (40 CFR 180.399). Tolerances are established for iprodione and its non-hydroxylated metabolites at 0.1 ppm in meat, fat, and meat by-products of cattle, goats, hogs, horses, and sheep. Tolerances are established for iprodione and its hydroxylated and non-hydroxylated metabolites at 0.02 ppm in milk. Temporary tolerances are established on grapes at 60 ppm, lettuce at 7 ppm, and dry and succulent beans at 2 ppm. Proposed tolerances for grapes at 60 ppm, milk at 0.3 ppm, liver and kidney at 3 ppm, meat, fat, and meat by-products (except liver and kidney) at 0.4 ppm, eggs at 0.8 ppm, and proposed food additive tolerances for raisin waste at 1000 ppm, raisins at 300 ppm, and dry grape pomace at 225 ppm are in reject status (PP# 3F2964/FAP # 4H5415, R. W. Cook, February 21, 1984).

Under the proposed EUP, a total of 60,000 lbs. Rovral (30,000 lb. a.i.) will be shipped for use on a total of 10,000 acres in the states of VA, NC, OK, and TX from June 1984-September 1984.

Conclusions

1. The metabolism of iprodione in plants is adequately understood. The metabolic pathway in peanuts, lettuce, strawberries, wheat, and peaches is the same. The residues of concern are parent (RP 26019), its isomer (RP 30228), and the des-isopropyl metabolite (RP 32490).

2a. The metabolism of iprodione in animals is adequately defined for the proposed EUP. The residues in livestock animals (except milk, poultry liver and kidney, and eggs) which are of concern for the EUP are the non-hydroxylated des-isopropyl metabolite RP 32490, and iprodione (RP 26019). The major residues in milk are RP 36114 and RP 32490. Residues of concern in poultry liver and kidney are RP 44247 (3,5-dichlorophenylurea). Unknown Z, RP 32490 and iprodione (RP 26019). Residues in eggs include RP 32490, RP 36112, RP 36115, RP 44247, iprodione (RP 26019), and 7 minor identified metabolites (each $\leq$ 3.2% of the total extractable residue).

2b. For any future permanent tolerance, we defer to TOX as to their concern over residues of the metabolite 3,5-dichloro-4-hydroxyphenylurea, which is the major extractable residue in goat kidney (approx. 23% of the total extractable residue).

2c. For the purposes of this EUP we are not concerned that Unknown Z (which comprises 26% of the extractable ^{14}C residue in chicken liver and 15.5% of the extractable ^{14}C residue in chicken kidney) is not yet identified, since no detectable residues are expected in poultry or eggs from this use.

3. Adequate plant analytical methods are available for enforcement of the proposed temporary tolerances on peanuts.

4a. Adequate analytical methods are available for enforcement of the temporary tolerances on meat, milk, poultry, and eggs. The methods analyze iprodione (RP 26019) and RP 32490 in meat and iprodione (RP 26019), RP 32490, and RP 36114 in milk. The analytical method for poultry and eggs (submitted in PP# 3F2964, Acc # 071951) analyzes iprodione (RP 26019), RP 32490, and possibly other non-hydroxylated metabolites (including RP 44247, RP 36112, and RP-36115).

4b. Since residues in poultry and eggs, if any, would be non-detectable (<0.05 and<0.01 ppm, respectively), we are not requiring additional information on the analytical methods for poultry for this EUP.

4c. For any future permanent tolerance, we will need to know whether 3,5-dichloro-4-hydroxyphenylurea (which comprises 22.7% of the extractable residue in goat kidney and 8.9% of the extractable residue in goat liver) is also determined by the analytical method. (See our deferral to TOX in Conclusion 2b).

5a. Residues in peanuts (i.e., nut meat) resulting from the proposed use will not exceed the proposed temporary tolerance of 0.1 ppm.

5b. Residues in peanut hulls resulting from the proposed use may exceed the proposed temporary tolerance of 5.0 ppm. A temporary tolerance of 7 ppm on peanut hulls should be proposed.

5c. Residues in peanut hay resulting from the proposed use may exceed the proposed temporary tolerance of 110.0 ppm. A temporary tolerance of 150 ppm on peanut forage and hay should be proposed.

5d. The proposed temporary tolerance for "nut meat" should be reworded "peanuts" since the shell is removed and discarded from nuts before examination for pesticide residues. The proposed temporary tolerance for "hay" should be reworded "peanut forage and hay."

5e. Based on a ^{14}C study which indicates that residues resulting from the proposed use in peanut meat, oil, and peanut meat after oil is extracted will be <0.1 ppm, we conclude that no temporary food additive tolerances are needed for the EUP. However, for a future permanent tolerance, peanut processing studies will be needed to allow us to determine whether food additive tolerances are needed for crude oil, refined oil, peanut meal, and soapstock.

6a. Residues in meat, fat, and meat by-products of hogs resulting from the proposed use are not likely to exceed the established tolerance of 0.1 ppm.

6b. Residues in poultry (meat, fat, and meat by-products) and eggs resulting from the proposed use are expected to be non-detectable (<0.05 ppm and <0.01 ppm, respectively).

6c. Since the established tolerances of 0.1 ppm on meat, fat, and meat by-products and 0.02 ppm on milk are exceeded by the proposed use except for hogs and since no tolerances exist for poultry and eggs, temporary tolerances should be proposed. These temporary tolerances should be 0.6 ppm in meat, fat, and meat by-products (excluding liver and kidney) of cattle, hogs, goats, horses, and sheep; 3.0 ppm in kidney of cattle, hogs, goats, horses, and sheep; 2.0 ppm in liver of cattle, hogs, goats, horses, and sheep, 0.4 ppm in milk, 0.05 ppm in meat, fat, and meat by-products of poultry (method sensitivity), and 0.01 ppm for eggs (method sensitivity).

Alternatively, the petitioner may wish to restrict the feed use of peanut vines and hay. If grazing and feeding of peanut vines and hay are restricted, then maximum residues in the feed of dairy cattle from peanut meal, stoapstock, and almond hulls and in the feed of beef cattle from peanut meal, peanut hulls, soapstock, and almond hulls would be 0.09 ppm and 0.4 ppm, respectively, and the established tolerances of 0.1 ppm for meat, fat, and mbyp of livestock and 0.02 ppm for milk would be adequate. Method sensitivity temporary tolerances for poultry and eggs would still need to be proposed.

Recomendations

We recommend against the proposed temporary tolerances for the reasons cited in conclusions 5b, 5c, 5d, and 6c.

Additional requirements for a future permanent tolerance will be enumerated when the petitioner responds to the current deficiencies.

Detailed Considerations

Manufacture

The manufacturing process was reviewed in PP# 6G2087 (A. Rathman, March 2, 1979), to which we refer. Technical iprodione is 95% pure with none of the impurities comprising more [redacted] of the material. None of these impurities is expected to present a residue problem.

Formulation

Rovral is a wettable powder formulation containing 53.16% technical iprodione, [redacted] All inerts are cleared under Section 180.1001(c).

Proposed Use

Apply 2.0 lbs. Rovral/A (1.0 lb. ai/A) in 40 gals. water/A using a tractor-mounted boom sprayer equipped with low pressure nozzles that produce large droplets. Apply the first application when conditions are favorable for disease development. Apply up to 2 more applications at 4-week intervals but not within 10 days of harvest. Garlic, leafy vegetables, and tomatoes may be rotated after harvest. Root crops, cereal grains, and soybeans may be rotated the year following treatment.

Nature of the Residue

Plants

A metabolism study of ^{14}C-phenyl-ring-labeled iprodione in peanuts is submitted. Previous metabolism studies on lettuce (PP # 3G2801, N. Dodd, April 11, 1983), strawberries and wheat (PP# 8G2087, A. Rathman, March 2, 1979), and peaches PP# 2F2596, R. Perfetti, May 13, 1982) are also available.

Iprodione in a wettable powder formulation (a mixture of ^{14}C-phenyl-ring-labeled iprodione and Iprodione 46% Wettable Powder) was applied three times to peanuts at the rate of 1.0 lb. a.i./A in an outdoor research lab in Louisiana. The applications were 66, 35, and 10 days before harvest. Total ^{14}C residues 10 days after the last treatment were 43.0 ppm on peanut hay, 0.047 ppm on peanut meat, 0.13 ppm on peanut hulls, and 0.037 ppm in peanut oil, 0.085 ppm on peanut meat after oil is extracted, and 1.68 ppm on peanut roots. In peanut hay at harvest, residues were 54.2% of 23.3 ppm parent (RP-26019), 14.6% or 6.3 ppm RP-30228 [the isomer of iprodione: 3-(1-methylethyl)-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide], 8,8% or 3.8 ppm RP-32490 (the des-isopropyl metabolite), 5.4% or 2.3 ppm RP-25040 [3-(3,5-dichlorophenyl)hydantoin], and traces of RP-36112 (the isomer of the des-isopropyl analog RP-32490). In hulls, residues were 42.4% or 0.06 ppm RP-26019, 3.1% or less than 0.05 ppm RP-30228, and trace amounts of RP-32490 and RP-25040. Residues in mature peanuts (0.037 ppm in oil and 0.085 ppm in meat) were not identified. RP-36112 was found in amounts of 29.3-32.8% of the ^{14}C applied in immature peanut plants sampled 31 days after the first treatment but was found only in trace amounts in the mature plant.

Residues in strawberries, wheat, peaches, and lettuce were parent, the isomer 3-(1-methylethyl)-N-(3,5-dichlorophenyl)-2,4-dioxo-1-imidazolidinecarboxamide (RP-30228), and a lesser amount of a des-isopropylated metabolite (RP-32490). Traces of RP-35606 were also found in lettuce leaves.

Studies on strawberries and wheat indicated that iprodione which is applied to soil is taken up by roots and translocated to aerial portions of the plant. After foliar treatment, most of the radioactivity remains at the site of application.

We conclude that the metabolism of iprodione in plants is adequately understood. The metabolic pathway in peanuts, lettuce, strawberries, wheat, and peaches is the same. The residues of concern are parent, its isomer (RP-30228), and the des-isopropyl metabolite (RP-32490).

Animals

No new animal metabolism studies are submitted with this petition. Previous metabolism studies are available (PP# 2F2728,

M. Kovacs, October 25, 1982, and PP# 3F2964/FAP# 4H5415, R. Cook, February 21, 1984). The major residue in goat muscle is RP 32490. The major residues in goat fat and liver are RP 32490 and parent. The major residues in goat kidney are 3,5-dichloro-4-hydroxyphenylurea and RP 32490. The major residues in goat milk are RP 36114 and RP 32490. The major residues in poultry muscle and fat are RP 32490 and iprodione. The major residues in poultry liver and kidney are RP 44247, Unknown Z, and RP 32490. The major residues in eggs are RP 32490, RP36112, RP36115, and RP44247.

We conclude that metabolism of iprodione in animals is adequately defined for the proposed EUP. The residues in livestock animals (except milk, poultry liver and kidney, and eggs) which are of concern for the EUP are the non-hydroxylated des-isopropyl metabolite RP 32490, and iprodione (RP 26019). The major residues in milk are RP 36114 and RP 32490. Residues of concern in poultry liver and kidney are RP 44247 (3,5-dichlorophenylurea), Unknown Z, RP 32490 and iprodione (RP 26019). Residues in eggs include RP32490, RP36112, RP36115, RP44247, iprodione (RP26019) and seven minor identified metabolites (each $\leq$3.2% of the total extractable residue).

For any future permanent tolerance, we defer to TOX as to their concern over residues of the metabolite 3,5-dichloro-4-hydroxyphenylurea, which is the major extractable residue in goat kidney (approx. 23% of the total extractable residue.)

We are not concerned for the purposes of this EUP about Unknown Z (which comprises 26% of the extractable ^{14}C residue in chicken liver and 15.5% of the extractable ^{14}C residue in chicken kidney) since no detectable residues are expected in poultry or eggs from this use.

Analytical Method

Peanuts

The analytical method for peanuts was Rhone-Poulenc's method #162 ("Determination of Iprodione and its Metabolites in/on Grain and Hay by GLC and TLC) with modifications for peanut meat. The method determines RP-26019, RP-30228, and RP-32490. The ground sample was exhaustively extracted in an aqueous acetone solution containing 10% water. For nutmeat, the extraction was done twice with pure acetone. After filtration, a 1% sodium sulfate solution was added to the filtrate. The pH was adjusted to pH 3 with 5N hydrochloric acid. The residue was extracted with 10% ethyl acetate in methylene chloride. The residue was cleaned up by gel permeation chromatography. The residue was subjected to liquid/ liquid partition using hexane/acetonitrile. The residue was eluted through a Florisil column and determined by gas-liquid chromatography with an electron capture detector. Thin layer chromatography can be used for confirmation. The petitioner states that the limit of detection for RP-26019, RP-30228, and RP-

32490 is 0.05 ppm.

Untreated control samples showed residues of 0.00 ppm RP-26019, 0.00-0.04 ppm RP-30228, and 0.00 ppm RP-32490 in peanut meat, 0.00-1.59 ppm RP-26019, 0.00-0.20 ppm RP-30228, and 0.00-0.29 ppm RP-32490 in peanut hay, and 0.00-0.51 ppm RP-26019, 0.00-0.12 ppm RP-30228, and 0.00-0.25 ppm RP-32490 in peanut hulls.

Recoveries in peanut meat at spike levels of 0.05-0.5 ppm were 60.7%-144.7% RP-26019, 89.5-122.8% RP-30228, and 71.2-123.6% RP-32490. Recoveries in hulls at spike levels of 0.1-0.5 ppm were 87.3-131.4% RP-26019, 67.9-121.6% RP-30228, and 82.2-106.3% RP-32490. Recoveries in hay spiked at levels of 5.0, 10.0, and 100.0 ppm RP-26019, 1.0 ppm RP-30228, and 1.0 ppm RP-32490 were 80.1-116.0% RP-26019, 91.2-98.5% RP-30228, and 68.6-105.5% RP-32490.

An interference study indicated that 11 other pesticides which might be used in an integrated pest control program would not interfere with the determination of RP-26019, RP-30228, and RP-32490.

We conclude that adequate plant analytical methods are available for enforcement of the proposed temporary tolerances on peanuts.

Meat, Milk, Poultry, and Eggs

The analytical methods for analysis of bovine tissues (muscle, kidney, liver, and fat) and milk are discussed in PP# 2F2728 (M. Kovacs, October 25, 1982.) The analytical method for bovine tissues is ADC #623-B. The methods for milk are ADC #623-A and the Rhone-Poulenc Method #159. Both methods are gas chromatographic methods using electron capture detectors. Successful method tryouts on cattle liver and milk have been conducted. The methods determine iprodione and its non-hydroxylated metabolites in meat and iprodione, its non-hydroxylated metabolites, and its hydroxylated metabolites in milk. Recoveries for iprodione and RP-32490 in kidney, muscle, fat, and liver are adequate. Recoveries for iprodione, RP-32490, and RP-36114 in milk are adequate. The sensitivity of method ADC #623-B on meat is 0.05 ppm. The sensitivity of the methods on milk (ADC #623-A for iprodione + RP32490 and the Rhone-Poulenc Method #159 for RP-36114) are 0.01 ppm.

We conclude that adequate analytical methods are available for enforcement of the temporary tolerances on meat, milk, poultry, and eggs. The methods analyze iprodione (RP-26019) and RP-32490 in meat and iprodione (RP-26019), RP-32490, and RP-36114 in milk. The analytical method for poultry and eggs (submitted in PP# 3F2964, Acc# 071951) analyzes iprodione (RP-26019), RP-32490, and possibly other non-hydroxylated metabolites (including RP-44247, RP-36112, and RP-36115).

Since residues in poultry and eggs, if any, would be non-detectable (<0.05 and <0.01 ppm, respectively), we are not requiring additional information on the analytical methods for poultry for this EUP.

For any future <u>permanent</u> tolerance, we will need to know whether 3,5-dichloro-4-hydroxyphenylurea (which comprises 22.7% of the extractable residue in goat kidney and 8.9% of the extractable residue in goat liver) is also determined by the analytical method. (See our deferral to TOX in Conclusion 2b).

<u>Residue Data</u>

Twelve studies on peanuts were conducted in the six states of GA(3), TX(3), AL(3), VA(1), OK(1), and NC(1). Rovral 50WP was sprayed on foliage three times at the rate of 1.0 lb. a.i./A in 40-48 gals. water/A. The first two applications were 4 weeks apart while the third was applied 3-7 1/2 weeks after the second. The interval between the second and third applications was 4 weeks in 5 of the 12 studies. The preharvest intervals ranged from 0-11 days. Samples were stored frozen. No residues of RP-26019, RP-30228, or RP-32490 were found in nut meat. Residues in hulls were 0.26-5.25 ppm RP-26019, 0.00-1.38 ppm RP-30228, and 0.00-0.73 ppm RP-32490. Residues in hay were 15.60-146.70 ppm RP-26019, 0.16-8.50 ppm RP-30228, and 0.34-6.42 ppm RP-32490. Total residues (parent plus the isomer and metabolite) were 0.00 ppm in nutmeat, 0.5-6.85 ppm in hulls, and 16.23-148.54 ppm in hay.

Residues in hulls exceeded 5.0 ppm in two cases: 5.66 ppm and 6.85 ppm at 0-day PHI's. Hay exceeded 110 ppm in one case (148.54 ppm at a 0-day PHI) and was close in another case (104.63 ppm at a 9-day PHI). No data are provided on whether these highest residues (5.66 and 6.85 ppm in hulls and 148.54 ppm in hay at 0-day PHI's) would decline by a 10-day PHI to levels not exceeding the proposed temporary tolerances. The proposed use specifies a 10-day PHI.

For data on peanut processing fractions, we refer to the ^{14}C metabolism study discussed under "Nature of the Residue." Residues were 0.047 ppm in peanut meat, 0.037 ppm in peanut oil, and 0.085 ppm on peanut meat after oil is extracted.

We conclude that residues in peanuts (i.e. nut meat) resulting from the proposed use will not exceed the proposed temporary tolerance of 0.1 ppm. Residues in peanut hulls resulting from the proposed use may exceed the proposed temporary tolerance of 5.0 ppm. Residues in peanut hay resulting from the proposed use may exceed the proposed temporary tolerance of 110.0 ppm. We would expect that temporary tolerances of 7 ppm on peanut hulls and 150 ppm on peanut forage and hay would be adequate to cover residues resulting from the proposed use. The proposed temporary tolerance for "nut meat" should be reworded "peanuts" since the shell is removed and discarded from nuts before examination for pesticide residues. The proposed temporary tolerance for "hay" should be reworded "peanut forage and hay."

Based on a ^{14}C study which indicates that residues resulting from the proposed use in peanut meat, oil, and peanut meat after

oil is extracted will be <0.1 ppm, we conclude that no temporary food additive tolerances are needed for the EUP. However, for a future permanent tolerance, peanut processing studies will be needed to allow us to determine whether food additive tolerances are needed for crude oil, refined oil, peanut meal, and soapstock.

Meat, Milk, Poultry, and Eggs

No new animal feeding studies are submitted with this petition. We refer to a cattle feeding study which was previously reviewed in connection with PP# 2F2728 (M. Kovacs, October 25, 1982) and to a poultry feeding study which was previously reviewed in connection with PP# 3F2964 (R. Cook, February 21, 1984).

In the cattle feeding study, technical iprodione was fed at levels of 5, 15, 50, and 200 ppm for 29 days. Iprodione and its non-hyroxylated metabolites were determined in meat. Iprodione, its non-hydroxylated metabolites, and its hydroxylated metabolites were determined in milk. Residues in milk at the 28th day of treatment for levels of 5, 15, 50, and 200 ppm were <0.01, 0.383, 0.389, and 0.329 ppm. Maximum residues in kidney at 5, 15, 50 and 200 ppm feeding levels were <0.05, 0.16, 0.80, and 2.87 ppm, respectively. Maximum residues in muscle at 5, 15, 50, and 200 ppm feeding levels were <0.05, <0.05, 0.07, and 0.13 ppm, respectively. Maximum residues in fat at 5, 15, 50, and 200 ppm feeding levels were <0.05, <0.05, 0.21, and 0.52 ppm, respectively. Maximum residues in liver at 5, 15, 50 and 200 ppm feeding levels were <0.05, 0.13, 0.66, and 1.95 ppm, respectively.

In the chicken feeding study, technical iprodione was fed at levels of 0, 2, 20, and 100 ppm for 28 days. Iprodione and its non-hydroxylated metabolites were determined in eggs and chicken tissue. Residues in muscle at 28 days for the 2, 20, and 100 ppm feeding levels were <0.05, 0.32, and 1.68 ppm, respectively. Residues in fat for the 2, 20, and 100 ppm feeding levels were 0.18, 2.57, and 8.62 ppm, respectively. Residues in liver at 2, 20, and 100 ppm feeding levels were 0.61, 4.10, and 13.4 ppm, respectively. Residues in kidney for the 2, 20, and 100 ppm feeding levels were 0.33 , 2.30, and 6.87 ppm, respectively. The maximum residues found in eggs during the 28 day study for the 2, 20, and 100 ppm feeding levels were 0.137 ppm, 0.75 ppm, and 2.17 ppm, respectively.

It was determined (PP# 3F2964, R, Cook, February 21, 1984) that feeding of technical iprodione rather than aged residues was acceptable since both plant and animal studies indicate metabolism to the des-isopropyl metabolite.

Since there are feed restrictions on beans and grapes under the temporary tolerances, the only feed item for which a tolerance or temporary tolerance is established is almond hulls at 0.25 ppm. Peanut meal, vines, hay, and hulls are feed items. Peanut hay can comprise up to 60% of the diet of dairy cattle and up to 25% of the diet of beef cattle. Peanut vines can comprise up to 40% of the diet of dairy cattle and up to 20% of the diet of beef cattle. Peanut meal can comprise up to 25% of the diet of dairy cattle, up to 15% of the diet of beef cattle, and up to 10% of the diet of poultry and swine. The maximum residues of iprodione in the diets of dairy cattle, beef cattle, poultry, and swine are calculated below:

Dairy Cattle	Maximum Percentage of Diet		Suggested Temporary Tolerance (ppm)		
Peanut hay	60	x	150.0	=	90
Peanut vines	40	x	150.0	=	60

Beef Cattle	Maximum Percentage of Diet		Suggested or Proposed Temporary Tolerance or Tolerance		
Peanut hay	25	x	150.0	=	37.5
Peanut vines	20	x	150.0	=	30.0
Peanut hulls	5	x	7.0	=	0.35
Almond hulls	25	x	0.25	=	0.06
Peanut meal	5	x	0.1	=	0.015

Poultry and Swine	Maximum Percentage of Diet		Proposed Temporary Tolerance		
Peanut meal	10	x	0.1	=	0.01 ppm
Peanut soapstock	5	x	0.1	=	0.005 ppm

It is not likely that the dietary intake of iprodione would be as high as 150 ppm in dairy cattle. A more reasonable estimate would be 90 ppm resulting from a diet of 60% hay and 25% meal.

We can determine from the 200 ppm cattle feeding level data that residues of iprodione and its non-hydroxylated metabolites in meat and of iprodione, its non-hydroxylated metabolites in meat and of iprodione, its non-hydroxylated metabolites, and its hydroxylated metabolites in milk of dairy cows fed 90 ppm iprodione in the diet will not exceed 0.4 ppm in milk, 3.0 ppm in kidney, 0.2 ppm in muscle, 0.6 ppm in fat, and 2.0 ppm in liver.

We can determine from the poultry feeding data that residues do not concentrate in poultry so that residues in poultry and eggs resulting from a feeding level of 0.015 ppm in the diet would be expected to be less than 0.015 ppm. Since the sensitivity of the meat method is 0.05 ppm, a tolerance for poultry (meat, fat, and meat by-products) of 0.05 ppm should be proposed. A tolerance for eggs should also be proposed at the level of method sensitivity, 0.01 ppm.

We can determine from the 5 ppm feeding level data on cattle that residues of iprodione and its non-hydroxylated metabolites in meat, fat, and meat by-products of hogs fed 0.015 ppm iprodione in the diet are not likely to exceed the established tolerance of 0.1 ppm.

We conclude that residues in hogs (meat, fat, and meat by-products) resulting from the proposed use are not likely to exceed the established tolerance of 0.1 ppm. Residues in poultry (meat, fat, and meat by-products) and eggs resulting from the proposed use are expected to be less than 0.015 ppm. Residues in meat and milk of dairy cows are not likely to exceed 0.4 ppm in milk, 3.0 ppm in kidney, 0.2 ppm in muscle, 0.6 ppm in fat, and 2.0 ppm in liver. Since the established tolerances of 0.1 ppm on meat, fat, and meat by-products and 0.02 ppm on milk are exceeded by the proposed use except for hogs and since no tolerances exist for poultry and eggs, temporary tolerances should be proposed. These temporary tolerances should be 0.6 ppm in meat, fat, and meat by-products (excluding liver and kidney) of cattle, hogs, goats, horses, and sheep; 3.0 ppm in kidney of cattle, goats, horses, and sheep; 2.0 ppm in liver of cattle, hogs, goats, horses, and sheep, 0.4 ppm in milk, 0.05 ppm in meat, fat, and meat by-products of poultry (method sensitivity), and the method sensitivity for eggs (0.01 ppm).

Note: If grazing and feeding of peanut vines and hay are restricted, then residues in the feed of dairy cattle from peanut meal and soapstock and almond hulls and in the feed of beef cattle from peanut meal, peanut hulls, soapstock, and almond hulls would be 0.09 ppm and 0.4 ppm, respectively, and the established tolerances of 0.1 ppm for meat, fat, and mbyp of livestock and 0.02 ppm for milk would be adequate.

cc:R.F., Circu., Iprodione S.F., Reviewer, PP#4G3037, EAB, FDA, TOX, EEB, Robert Thompson
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