Thiophanate methyl

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

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

Subject: PP2F2729/FAP2H5364. Thiophanate-Methyl on Cucumbers, Melons, Pumpkins, Summer Squash, Winter Squash, Grapes, Pineapples, and Rice. Amended use on Celery and Stone Fruits. Evaluation of Analytical Methods and Residue Data.

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The petitioner, Agchem Division, Pennwalt Corporation, is proposing establishment of tolerances for the fungicide thiophanate-methyl (dimethyl[(1,2-phenylene)bis-(iminocarbonothioyl)]bis([carbamate]), tradenamed Topsin-M®, its oxygen analogue, dimethyl-4,4'-O-phenylenebis(allophanate) and its benzimidazole-containing metabolites (calculated as thiophanate-methyl) in or on the raw agricultural commodities cucurbits (cucumbers, melons, pumpkins, and summer and winter squash) at 1 ppm, grapes (fresh) at 10 ppm, rice at 5 ppm and rice straw at 15 ppm, and feed additive tolerances for the animal feed items dried grape pomace at 125 ppm, and rice hulls at 20 ppm. Food additive tolerances are proposed for raisins at 50 ppm, and pineapples at 35 ppm (from post-harvest dip).

Additionally, the petitioner is requesting changes in use patterns for celery (increase in maximum number of applications from 4 to 9) and deletion of the 1 day PHI for stone fruits. Further, the petitioner has considered the pre-plant pineapple seed piece treatment as a non-food use and no tolerance is proposed.

The petitioner notes that the proposed uses, tolerances and restrictions bring the tolerances for thiophanate-methyl to the same level as for benomyl, both of which metabolize to the common metabolite MBC, which is codified under §180.3(d)(10).

Temporary tolerances have been recently proposed for rice at 5 ppm, rice straw at 15 ppm, and rice hulls at 20 ppm under PP2G2662/2H5342 and for grapes at 10 ppm, raisins at 50 ppm, and dried grape pomace at 125 ppm under PP2G2639/2H5341.

Tolerances for thiophanate-methyl, its oxygen analog, and benzimidazole-containing metabolites have been established for several commodities under §180.371. Tolerances for thiophanate-methyl are also established on:

-Eggs: 0.1 (N) ppm.
-Milk: 1.0 ppm.
-Fat of cattle: 0.1 ppm; Fat of Goats, Hogs, Horses, Sheep, and Poultry: 0.1 (N) ppm.
-Meat of Cattle, Goats, Hogs, Horses, Sheep, and Poultry: 0.1 (N).
-Liver of Cattle, Goats, and Sheep: 2.5 ppm; Liver of Hogs and Horses: 1.0 ppm; and Poultry liver: 0.2 (N).
-Kidney of Cattle: 0.2 (N) ppm; and kidney of Goats and Sheep: 0.2 ppm.
-Meat byproducts of Cattle (except kidney and liver), Goats (except kidney and liver), Hogs (except liver), Horses (except liver), Sheep (except kidney and liver), Poultry (except liver): 0.1 (N) ppm.

No food additive tolerances have been previously established. A feed additive tolerance of 40 ppm in dried apple pomace has been established.

Conclusions:

1. The metabolism of thiophanate-methyl in plants and animals is adequately understood for the purposes of this petition. The residues of concern are the parent compound, benzimidazole-containing metabolites (primarily MBC) and allophanate.

2. Adequate analytical methods are available for determination of thiophanate-methyl, its oxygen analog dimethyl-4,4'-O-phenylenebis (allophanate), and MBC in plants and animals.

3. In regard to a permanent tolerance on rice, additional residue data for rice grown in California are required, or a rationale why such residue data are not necessary. Without such data, we are also unable to determine if the established tolerances for meat, milk, poultry, and eggs are adequate. We tentatively conclude, pending receipt of the requested residue data for California rice, that residue in rice will not exceed the proposed 5 ppm tolerance. Additionally, §180.3(d)(10) applies.

4. In regard to pineapples, we now conclude that:

a) Residues from the post-harvest dip treatment are not expected to exceed the proposed 35 ppm tolerance and residues, if any, from the pre-plant seed piece dip treatment will be adequately covered.

b) The petitioner should clarify the proposed post-harvest use on pineapples. If treated pineapples are intended for the fresh market only, a revised Section B limited to fresh market pineapples only is needed. If post-harvest treated pineapples are intended for processing, residue data on processed pineapple fractions and byproducts are needed.

c) The tolerance for the post harvest use on pineapples is a pesticide tolerance. A revised Section F proposing a pesticide tolerance is needed.

5. In regard to grapes, we conclude that:

a) residues in grapes resulting from the proposed use are likely to exceed

the requested tolerance of 10 ppm; a tolerance level of 15 ppm appears adequate to cover expected residues from the proposed use.

b) the proposed 50 ppm tolerance for residues in raisins is appropriate and adequate;

c) that data for juice and wet pomace are not adequate as the level of residues in the grapes before processing was not given;

d) no data are available for dry pomace and raisin waste; in the absence of adequate data for these by-products we can make no conclusion on levels of residues likely to result in them and further, we are also unable to determine the adequacy of the established tolerances for residues in meat, milk, poultry, and eggs.

6. We conclude that residues from the changed use pattern of thiophanate-methyl in or on stone fruits, harvested less than 1 day after treatment, will not exceed the established 15 ppm tolerance.

7. We conclude that residues in celery are not expected to exceed the established 3 ppm tolerance from the revised use directions.

8. We conclude that residues in cucumbers, melons, pumpkins, and summer and winter squash are not expected to exceed the proposed 1 ppm tolerance. However, the tolerances should be set on the individual crops, since the term cucurbits refers to the crop grouping for negligible residues, and the proposed tolerance is not negligible. Section F should be revised accordingly.

9. We are unable to determine if the established tolerances for meat, milk, poultry, and eggs are adequate, since data for dried grape pomace, raisin waste and rice grown in California are not available.

Recommendations:

We recommend against establishing the proposed tolerances for the reasons cited in Conclusions 3, 4b, 4c, 5a, 5c, 5d, 8, and 9. For a favorable recommendation, the petitioner should be advised that:

A revised Section F specifying individual tolerances of 1 ppm for the raw agricultural commodities cucumbers, melons, pumpkins, and squash is needed. The term cucurbits is used when setting negligible residue tolerances for this crop grouping, and the currently proposed tolerance of 1 ppm is not negligible.

For a permanent tolerance, additional residue data for rice grown in California are required, or a rationale why such data are not necessary.

Clarification of the postharvest use on pineapples is needed before we can determine if the tolerance is adequate. If the post-harvest treated pineapples are intended for the fresh market only, a revised Section B restricting use to fresh market pineappples is needed. However, such a restriction may not be practical. Any information available on the practicality of this restriction should be submitted. Otherwise, if the restriction is not practical, the restriction may not appear on the label and residue data for dried pineapple bran are needed. In addition, a revised

Section F specifying a pesticide tolerance, not the currently proposed food additive tolerance, is needed for the post harvest pineapple use.

A revised Section F proposing a tolerance for grapes at 15 ppm, and/or raw data or other information demonstrating that the Dresden, NY, samples are not representative of the proposed use.

Residue data for the animal feed items dry grape pomace and raisin waste, as well as information on residues in wet pomace, correlated to the residue level in fresh grapes, are needed to determine if the established tolerances for meat, milk, poultry, and eggs are adequate.

The petitioner should be advised that raw residue data must be submitted, and summary sheets may be provided. This applies to the proposed uses on grapes, cucurbits, and rice.

DETAILED CONSIDERATIONS:

Manufacturing Process:

The formulation proposed for this petition is Topsin-M® 70% Wettable Powder containing 70% active ingredient thiophanate-methyl (dimethyl[(1,2-phenylene)bis(iminocarbonothioyl)]bis([carbamate]) and 30% inert ingredients. Detailed considerations of this formulation are reviewed in PP9F2274/FAP9H5241, A. Smith, 8/4/80. The impurities are not likely to be a residue problem and the inert ingredients are cleared for use under §180.1001.

Proposed Use:

Celery: For control of early and late blight, apply 0.5 pounds/A Topsin-M® (0.35 lbs. a.i./A) to base of plants on 14 to 21 day schedule beginning about 2 weeks after transplanting OR apply as foliar spray every 7 to 14 days beginning about 2 weeks after transplanting. Do not apply within 7 days of harvest. Do not make more than 9 applications per season.

Note: Previously accepted use pattern for celery was limited to no more than 4 applications. Current application increases this restriction to 9 applications.

Cucurbits: For control of anthracnose, gummy stem blight, powdery mildew, and target spot (cucumbers) in cucumbers, melons, pumpkins, and summer and winter squash, apply 0.25 to 0.5 pounds/A Topsin M® (0.17 to 0.35 lbs. a.i./A) by ground equipment or 0.5 pounds/A Topsin-M® (0.35 lbs. a.i./A) by aerial equipment. Begin applications when plants begin to run or when disease appears, and repeat at 7 to 14 day intervals as needed. For target spot use 7 day intervals. There is no PHI restriction for cucurbits in proposed use directions.

Grapes: For control of Botrytis Bunch Rot and Powdery Mildew, apply 1 to 1.5 pounds/A Topsin-M® (0.7 to 1.05 lbs. a.i./A) at first bloom (no later than 5% bloom) and repeat 14 days later if severe disease conditions persist. Make an additional application 3 to 4 weeks before harvest or when sugar begins to build; repeat 14 days later if conditions require. Do not apply within 7 days of harvest. Topsin-M® does not control bunch rots caused by Rhizopus spp., Alternaria spp., and Diplodia spp.

East of Rocky Mountains Only, for control of bitter rot, black rot, and powdery mildew, apply 0.75 to 1.5 lbs. Topsin-M® per acre (0.5 to 1.05 lbs. a.i./A) when foliage first develops and repeat at 14 to 21 day intervals or as needed, until berries are full size. Do not apply within 7 days of harvest.

Pineapples: As preplant dip treatment, for control of pineapple butt rot in pineapple seed pieces, immerse seedpieces in solution of 1.25 lbs. Topsin-M® per 100 gallons solution (0.875 lbs. a.i./100 gallons solution) to give thorough wetting; remove and drain.

For postharvest control of Thielaviopsis Rot, use 2 to 4 pounds Topsin-M® per 100 gallons of solution (1.4 to 2.8 lbs. a.i./ 100 gallons solution). Immediately after harvest, immerse or spray fruit to give thorough wetting. Do not immerse for more than 5 minutes.

Rice: Except CALIFORNIA: For control of rice blast and stem rot, apply 1 to 2 pounds Topsin-M® per acre (0.7 to 1.4 lbs. a.i./A) at booting and repeat at heading. Do not apply within 21 days of harvest. Do not apply to stubble rice. (Note: the proposed use rate is 2X the temporary tolerance rate.) There is a restriction against use in fields where catfish or crayfish farming is practiced. There is a restriction against the use of treated water to irrigate other crops.

Stone Fruit: (peach, apricot, cherry, nectarine, plum, prune). The petitioner has deleted the 1 day PHI restriction for stone fruits.

Nature of the residue:

No new metabolism data are submitted in this petition. The metabolism of thiophanate-methyl in plants has been previously discussed (PP9F2274/FAP9H5241, A. Smith, 8/4/80). Thiophanate-methyl is absorbed, translocated, and metabolized in plants. Plant metabolites, are the parent compound, the oxygen analog of thiophanate-methyl (dimethyl4,4'-O-phenylenebis(allophanate), methyl 2-benzimidazole carbamate (MBC) and small amounts of compounds containing the benzimidazole moiety. In animals (mice, rat, sheep, poultry, dog) thiophanate-methyl is metabolized and excreted. The metabolites, besides parent compound, include methyl 2-benzimidazole carbamate (MBC), hydroxylated MBC, allophanate, 2-aminobenzimidazole (2-AB), 5-hydroxy-2-aminobenzimidazole [5-OH-(2-AB)], and glucuronides of hydroxy MBC, MBC, 2-AB, and hydroxy 2-AB. The metabolism of thiophanate-methyl in plants and animals is adequately understood. The residue of concern is the parent compound, its oxygen analog (allophanate), and benzimidazole-containing metabolites.

Analytical Methods:

The analytical method for residues of thiophanate-methyl, methyl 2-benzimidazole carbamate, and allophanate in grapes, rice, cucurbits, and pineapples is the same UV method used for a variety of fruits and other commodities and reviewed in PP9F2274/FAP9H5241 (A. Smith, 8/4/80). In essence, samples are extracted with acetone, centrifuged, and solvent evaporated. The remaining solution is adjusted to pH 6.5 7 and residue extracted into methylene chloride, which is evaporated, treated with acetic acid and copper acetate under heating to convert thiophanate-methyl to the metabolite metyl 2-benzimidazole carbamate. After dilution with HCl and washing with hexane, the aqueous portion is extracted with chloroform (to remove allophanate). Again, the solution is adjusted to pH 6.5 -7 and extracted with chloroform, which is then reextracted with sodium hydroxide. The NaOH solution is acidified, with

residues repartitioned into chloroform and then sulfuric acid for UV spectrophotometric quantification. Residues of allophanate are cleaned on Florisil and determined by HPLC. The method has been previously tried out on strawberries in conjunction with PP5F1573 and for residues in meat, milk, poultry, and eggs in conjunction with PP 9F2274. We consider the method adequate for enforcement purposes.

Crop blanks for cucumbers were ND (<0.02 ppm) to 0.04 ppm; for melons ND (<0.02 ppm) to 0.02 ppm; for squash ND (0.02 ppm) to 0.03 ppm; and for pumpkins all ND (<0.02 ppm). Recovery values for samples fortified at 0.5 ppm level, with or without the metabolite MBC at 0.25 ppm, ranged from 70 to 88%.

For grapes, crop blanks were ND (<0.03 ppm) to 0.10 ppm, and recovery values, fortified at 0.1 to 1.0 ppm level, with or without the metabolite MBC at 0.05 to 0.25 ppm, were 70 to 100%. Recoveries of allophanate at 0.2 of 1.0 ppm were 50 to 83%.

Crop blanks for pineapple fruit, rind, and leaves were all ND (<0.05 ppm). Recovery values, fortified at 0.1 or 1.0 ppm level, with or without the metabolite MBC, ranged from 67 to 110%.

For rice, crop blanks were all ND (<0.05 ppm).

Recovery of thiophanate-methyl in rice and rice fractions:

Fraction	Fortification Levels (ppm)	Recovery (%)
Rough Rice	0.05 - 1.0	70 - 100
Straw	0.2 - 2.0	60 - 78
Milled Rice	0.05 - 0.5	80 - 94
Brown Rice	0.025 - 0.5	67 - 79
Rice Hulls	0.025 - 0.5	53 - 96
Rice Bran	0.05 - 0.5	56 - 74
Rice Polish	0.08 - 1.0	56 - 80

Residue Data:

Previously submitted information indicates that residues of thiophanate-methyl are stable under conditions of frozen storage.

Celery: Additional data are submitted in support of the proposed changes for celery including a decrease in dosage rate and increase in the maximum permitted number of applications from 4 to 9. Recovery data are considered adequate. Four studies are submitted, three conducted at 0.7 lbs/A (2x new proposed rate) and all three of these had only 3 applications. Residues in these trials ranged from 0.71 to 5.02 ppm at 0 days to 0.35 to 2.49 ppm at 7 to 9 days. The higher values resulted from foliar treatments while lower values are from basal treatment. Only one study used 9 applications, at 1.0 lbs.a.i./A (about 3X maximum proposed rate). Residues of combined thiophanate-methyl and methyl 2-benzimidazole carbamate were 3.2 to 3.6 ppm at 0 days, and the single sample at 7 days showed 3.04 ppm. The summary data for these trials do not indicate whether this treatment was foliar or basal.

We conclude that residues are not expected to exceed the established 3 ppm tolerance from the revised use directions.

Cucumbers, Melons, Pumpkins, Summer Squash, and Winter Squash: A total of 21 studies in PA, VA, CA, DE, and MI are submitted. All trials used ground application equipment with from 1 to 9 applications at 0.35 (1X) to 1.4 (4X) pound active/A, with PHI from 0 to 14 days.

Untreated crop blanks showed ND (<0.02 ppm) to 0.03 ppm. Recovery values for these commodities fortified with 0.5 ppm thiophanate-methyl or 0.5 ppm thiophanate-methyl plus 0.25 ppm methyl 2-benzimidazole carbamate (MBC) ranged from 70 to 88%.

After 4 applications at 1X the maximum proposed rate, residues of thiophanate-methyl were 0.12 ppm at 0 days, 0.04 ppm at 7 days, and 0.03 ppm at 14 days. The maximum residue of thiophanate-methyl on any of the commodities was 1.3 ppm on yellow summer squash at 0 days after single application of 0.7 lbs.a.i./A at 2X rate. One other squash sample at 0 days (after receiving 3 applications of 1.4 lbs.a.i./A) had 1.22 ppm, and all other samples at all sample intervals contained <1.0 ppm.

The proposed tolerance is 1 ppm in or on cucumbers, melons, pumpkins, summer squash, and winter squash. We conclude that residues of thiophanate-methyl are not likely to exceed the proposed tolerance of 1 ppm. Although the tolerance of 1 ppm is higher than expected residues, we are not raising a question in this regard, since tolerances for benomyl, which degrades to the same MBC metabolite, has established tolerances at 1 ppm and 180.3(d)(10) applies.

Grapes: The submitted residue data for grapes is identical to previously reviewed data (PP2G2639/FAP2H5341, S. Malak, 6/18/82). In our previous review we concluded that a) residues in grapes resulting from the proposed use are not likely to exceed the requested temporary tolerance of 10 ppm (same level as current submission); b) the proposed 50 ppm tolerance for residues in raisins is appropriate and adequate; c) and that data for juice and wet pomace are not adequate as the level of residues in the grapes before processing was not given; additionally, no data are available for dry pomace and raisin waste; in the absence of adequate data for these by-products we can make no conclusion on the level of residues likely to result in them; further, we are unable to determine the adequacy of the established tolerances for residues in meat, milk, poultry, and eggs.

We have reconsidered the available grape residue data for permanent tolerance purposes. Although the preponderance of residue values are <5 ppm from the proposed use, several samples showed 7.32 to 7.66 ppm from 4 applications of 0.7 pounds ai/A. Converting these values to maximum proposed rates of 1.05 lb a.i./A., linear extrapolation yields a calculated residue of about 12 ppm. Since the petitioner has submitted only summary data, we are unable to determine if mitigating circumstance exist. We therefore conclude that residues in fresh grapes from the proposed use will exceed the proposed tolerance of 10 ppm, and a tolerance level of 15 ppm appears more appropriate. This conclusion is, however, subject to additional consideration if the petitioner submits raw data sheets for our examination.

In regard to the current petition at hand, we conclude that:

a) residues in fresh grapes resulting from the proposed use are likely to exceed the requested tolerance of 10 ppm; a tolerance level of 15 ppm appears more appropriate.
b) the proposed 50 ppm tolerance for residues in raisins is appropriate and adequate;
c) and that data for juice and wet pomace are not adequate as the level of residues in the grapes before processing was not given;
d) no data are available for dry pomace and raisin waste; in the absence of adequate data for these by-products we can make no conclusion on the level of residues

likely to result in them and we are unable to determine the adequacy of the established tolerances for residues in meat, milk, poultry, and eggs.

Pineapple: In our previous review of residue data from pre-plant seed piece dip use, it was unclear whether samples PI-4 and PI-6 were leaves, rind, or fruit; the petitioner was asked to clarify. The petitioner responded that PI-4 and PI-6 are samples of pineapple leaves taken from plants at 6 months after preplant dip, and no fruit is present at 6 months. We can confirm from our cultural practices files that fruit is not present at such time.

Other data previously reviewed indicated no detectable thiophanatemethyl residues (<0.05 ppm) in pineapple fruit at 22 to 24 months after planting.

We can now conclude that there is no reasonable expectation of real residues from proposed pre-plant dip treatment. In addition, any possible residues from pre-plant seed dip use would not exceed proposed tolerance for the post-harvest use on pineapples, when and if it is established. (See below). In current submission, the petitioner has proposed another use of thiophanate-methyl on pineapple, using 2 to 4 lbs. of 70% material per 100 gallons of water (1.4 to 2.8 pounds per 100 gallons = 1650 to 3300 ppm) as post-harvest application to prevent pineapple butt rot; residue data are presented. In this study, pineapples were dipped for an unspecified time interval (presumably 5 minutes) in solution of either 2,400 or 4,800 ppm (about 1.5X maximum proposed concentration). Although not stated, we presume that fruit were dried before analysis at 0 days after treatment. Residues of thiophanate-methyl in fruit (we assume pulp) were 0.37 to 0.78 ppm from either treatment. Residues in pineapple rind from 2,400 treatment solution were 12 ppm and twice this (24 ppm) for 4,800 ppm treatment solution. Residues of metabolite FH-432 (reported separately) were not detected (<0.05 ppm) at lower rate and not analyzed at higher rate. We conclude residues will not exceed the proposed 35 ppm and any residues from the pre-plant dip treatment will be adequately covered. No data are available for pineapple processing fractions juice or for the animal feed item dried pineapple bran. The petitioner's intent in regard to this use is not clear. If petitioner intends this use to protect fresh market pineapples, a revised Section B is needed with such limitation, if practical. Any available information on the practicality of such restriction should be submitted. If use is intended to protect pineapples from harvest to processing or the fresh market restriction is deemed impractical, residue data on pineapple processing fractions will be needed. Further, a revised Section F specifying a pesticide tolerance, rather than a food additive tolerance, is needed.

Rice: In our previous review of this same data under PP2G2662, for the purposes of a temporary tolerance, we have previously concluded:

a) Residues in rice resulting from the proposed use are not likely to exceed the proposed 5 ppm tolerance.
b) The proposed 15 ppm tolerance for rice straw is appropriate and adequate.
c) The proposed 20 ppm food additive tolerance for rice hulls is adequate to cover the anticipated residues arising from the proposed use.
d) A food additive tolerance for rice milling fractions (bran and polishings) is not required since residues in these fractions are not expected to exceed those in rough rice.
e) Additional residue data for rice grown in California are required.

However, for the purposes of a permanent tolerance, the previously requested residue data for rice grown in California are needed, or a rationale why such data are not necessary. Without confirmatory residue data for California rice, we are unable to reaffirm, for permanent tolerance purposes, that established meat, milk, poultry, and egg tolerances are adequate.

The proposed tolerance is 5 ppm in or on rice. We tentatively conclude, pending receipt of the requested residue data for California rice, and even though the proposed application rate is 2X the tested dosage rate, that residues of thiophanate-methyl are not likely to exceed the proposed tolerance of 5 ppm. Although the tolerance of 5 ppm is considerably higher than expected residues, we are not raising a question in this regard, since tolerances for benomyl, which degrades to the same MBC metabolite, has established tolerances at 5 ppm and 180.3(d)(10) applies.

Stone fruit: The petitioner wishes to delete the current 1 day preharvest interval for stone fruits; residue data for cherries, plums, apricots, nectarines, and peaches are submitted. No recovery or crop blank values are submitted for these residue data. However, since previous recovery data indicate adequate recovery from these commodities, we are not raising this question at the present.

For cherries 9 studies in 5 states (PA, NY, MI, WA, CA) are submitted, 8 with ground application and 1 by aerial application. The number of applications ranged from 1 to 6 and rates ranged from 1.04 to 2.1 lbs. a.i./A per application. Residues of thiophanate-methyl were 0.6 from 1 application at 1.5 lb/A and the maximum residues found were 4.9 ppm from 5 applications at 1.8 lb/A.

For plums 4 studies in 2 states (NY, CA) are submitted, 2 with ground application and 2 by aerial application. The number of applications ranged from 6 to 12 and rates ranged from 1.04 to 1.4 lbs. a.i./A per application. Maximum residues of thiophanate-methyl were 2.1 ppm from 6 applications at 1.04 lb/A.

For apricots 3 studies in CA are submitted, 2 with ground application and 1 by aerial application. Rates ranged from 1.04 to 2.1 lbs. a.i./A per application, totalling 3 applications. Residues of thiophanate-methyl were 0.8 from 3 aerial applications at 2.1 lb/A and the maximum residues found were 8.6 ppm from 5 ground applications at 2.1 lb/A.

For nectarines 5 studies in CA and WA are submitted, 4 with ground application and 1 by aerial application. The number of applications ranged from 1 to 6 and rates ranged from 0.37 to 1.4 lbs. a.i./A per application. The maximum residues found were 1.2 ppm from a single application at 0.35 lb/A.

For peaches 11 studies in 5 states (PA, MD, SC, NC, CA) are submitted, 9 with ground application and 2 by aerial application. The number of applications ranged from 1 to 10 and rates ranged from 1.04 to 2.1 lbs. a.i./A per application. Maximum residues of thiophanate-methyl were 15.1 ppm from 10 ground applications in NC at 1.04 lb/A, 12.8 ppm from 2 applications at 1.04 pounds/A, with most other studies showing <5.0 ppm.

Although the residue data for stone fruits are presented in summary form, the requested action, deletion of the 1 day PHI without changing the established tolerance is considered an minor amendment. The petitioner should be advised that raw data sheets are required for all residue data. We conclude that residues of thiophanatemethyl in or on stone fruits, harvested less than 1 day after treatment, will not exceed the established 15 ppm tolerance.

Residues in Eggs, Milk, Meat, and Poultry:

The feed items of concern in this petition are pineapple bran, rice hulls, rice bran, dried grape pomace, and raisin waste. If pineapples are intended for processing, residue data on processed pineapple fractions are required. Without information on possible residues in dried grape pomace, raisin waste, and on dried pineapple bran if appropriate, and on rice grown in California, we are unable to determine the adequacy of the established tolerances for residues in meat, milk, poultry, and eggs.

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cc: R.F., Circu., R. Cook, Thompson, FDA, TOX, EEB, EFB, PP#2F2729/FAP#2H5364
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