

2/13/95

MEMORANDUM:

SUBJECT: PP#6F3332: Cyromazine: Amendment of 12/20/94 Proposing Inadvertent Tolerances for Rotational Sweet Corn and Radishes. Revised Section F and Responses to Deficiencies Noted in CBTS's Review of 2/12/87. MRID No 434954-01 DP Barcode D210905 CBTS No. 14960

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In its 1987 review of PP # 6F3332, CBTS cited 9 deficiencies that led CBTS to recommend against the proposed tolerances for cyromazine (Trigard) on rotational sweet corn and radishes (A. Smith, memo, 2/12/87). CIBA-Geigy Plant Protection has replied by submitting responses to the cited deficiencies, together with a revised Section F. Below we list the deficiencies as originally presented that lead to the recommendation against the proposed tolerances, the petitioner's responses, and our comments and conclusions.

Conclusions and Recommendation

1. The petitioner has adequately resolved deficiencies 1c, 3a, 3c, 4b, 4c, 5, and 6 as identified in CBTS' memo of 2/12/87.
2. Deficiency 2b (the need for an independent validation and for Agency validation of an analytical method for residues in animal tissue commodities) remains unresolved. This deficiency should be resolved through PP#6F3329. (See 2/13/95 review of PP's 6H3329 and 6F3333 by J. Stokes.

3. The proposed Section F for sweet corn and radishes should be revised as suggested to incorporate language appropriate for indirect and inadvertent residues and to express the names of affected rac's in a manner consistent with usage in 40 CFR 180 and Table II. See page 8 of this review for the appropriate wording.
4. CBTS can recommend for the proposed tolerances if and when the deficiencies referred to in Conclusions 2 and 3 are resolved.

#### Detailed Considerations

##### Deficiency 1c

In ruminants (cows, goats, sheep), the nature of residues is not adequately delineated. The metabolite 1-methylcyromazine is reported to comprise a significant portion of the residues, and an unidentified component is about one-third of milk residue. The petitioner has been requested (PP#6F3329) to submit the characterization study for 1-methylcyromazine and to identify the unidentified component in milk.

##### Petitioner's Response

Issues concerning the metabolite 1-methylcyromazine were addressed in Ciba's response (MRID 432742-01, -02, -03, and revised Sections B and F) to EPA's review ([R. Lascola], dated 4/2/93) of petitions for establishment of tolerances in carrots; milk; meat; fat and meat by-products of cattle, goats, hogs, horses, and sheep; liver and kidney of cattle, goats, hogs, horses, and sheep (PP#6F3329); and tomatoes; processed tomato products excluding juice; dry tomato pomace (PP#6F3333[/2H5640]).

CBTS determined in this review (dated 4/2/93), Conclusion 2b, that the metabolism of cyromazine in ruminants is adequately described, pending acceptance of residue storage stability for cyromazine, melamine, and 1-methylcyromazine in meat, milk, and eggs under freezer storage conditions submitted 6/10/94 ((MRID 432742-03). CBTS also concluded that "The major residues in meat, milk, and meat by-products (except liver and kidney) would be cyromazine and melamine. The major residues in liver and kidney would be cyromazine and melamine, and 1-methylcyromazine."

##### Comments and Conclusions

CBTS's conclusions (R. Lascola, memo, 4/2/93) that the major residues are cyromazine and melamine in meat, milk, and meat by-products and cyromazine, melamine, and 1-methylcyromazine in liver and kidney resolves the concern expressed in deficiency 1c.

##### Deficiency 2b

A residue method is available for the metabolite 1-methylcyromazine in ruminant milk and tissues. When the presence of this component has been verified through an RCB review of the requested study (see 1c

2

above), then a method trial will be performed by EPA to determine the adequacy of the method for enforcement purposes.

#### Petitioner's Response

A new analytical method, AG-548A (MRID No. 422243-04) "Cyromazine: Analytical Method for the Determination of 1-methylcyromazine in Meat, Milk and Blood by High Performance Liquid Chromatography, Including Validation Data," has been reviewed by CBTS (review document cited in 1c above). The only deficiency concerning this method remaining at the time of that review was the need for independent laboratory validation. This deficiency has been addressed by submission on 6/10/94 of the method validation ruggedness study "Method Validation Ruggedness Trial for determination of 1-methylcyromazine in Liver Using Analytical Method AG-548A, Analytical Method for the Determination of 1-Methylcyromazine in Meat, Milk and Blood by High Performance Liquid Chromatography, including Validation Data," (MRID No. 4322742-02)

#### Comments and Conclusions

CBTS noted in its review of the amendments to PP#'s 6F3329 and 6F3333 (R. Lascola, memo, 4/2/93) that the analytical method for the determination of 1-methylcyromazine in animal tissues appeared to be adequate but required validation by the Agency. Submission of the method to the Agency's Beltsville laboratories was made contingent upon the submission of an independent laboratory validation. CBTS did not accept the method in its 4/2/93 review.

CBTS (J. Stokes, memo, 2/13/95) has concluded that the independent validation should be considered inadequate, pending resolution of whether the requirements of PR 88-5 for independent validation were met. When this question is resolved, the method will need to be validated by the Agency's Beltsville laboratories. The deficiency remains unresolved.

#### Deficiency 3a

Residues in radishes (roots and tops) are not likely to exceed the proposed tolerances as a result of crop rotation with treated celery or lettuce. The tolerance expression is not appropriate and should be "radishes, roots and radishes, tops".

#### Petitioner's Response

A revised Section F containing the appropriate tolerance expression for radishes is included in a separate volume with this submission.

#### Comments and Conclusions

The value for the tolerance for radishes in the revised and amended Section F is adequate. However, the expression for indirect or inadvertent tolerances in/on radishes in the revised and amended Section F is

inappropriate. See the suggested revised Section F below (page 8 of this review) for the expression of indirect or inadvertent tolerances in/on radishes

A revised section F should be submitted.

Deficiency 3c

The tolerance for sweet corn is appropriately expressed as "corn sweet (kernels plus cob with husk removed)." The petitioner should be asked to submit a revised Section F which contains this expression.

Petitioner's Response

A revised Section F containing the appropriate tolerance expression for sweet corn is included in a separate volume with this submission.

Comments and Conclusions

The tolerance expression for sweet corn in the revised and amended Section F reads "Corn, sweet (kernels plus cob with husk removed, forage, and fodder, .... 0.50 ppm" . This expression for tolerances in/on sweet corn is inconsistent with current tolerance expressions for sweet corn rac's and with sweet corn rac's as listed in the revised Table II. The tolerance expressions for sweet corn should be:

Corn, sweet (K+CWHR)	0.50 ppm
Corn, sweet, forage	0.50 ppm
Corn, sweet, fodder	0.50 ppm

Also, the tolerance expression should be for indirect or inadvertent residues. See the suggested revised Section F on page 8 for indirect or inadvertent residues of cyromazine in/on sweet corn rac's.

A revised Section F should be submitted.

Deficiency 4b

Residues of cyromazine and its metabolite melamine in eggs and meat of poultry would be adequately covered by the existing tolerances for layer hens (0.05 ppm, §180.414). The established tolerance should be revised to reflect poultry, in general. As a result revised tolerance proposals are needed and should be submitted. The petitioner should submit a revised Section F to amend 40 CFR 180.414(b) and (c) by deleting the tolerance expression "(chicken layer hens only)" in poultry, fat, meat, and meat by-products.

Petitioner's Response

Section F was revised accordingly and submitted on 6/10/94 with the response to the residue review of the petitions for tolerances in or on carrots, and tomatoes, thereby amending 40 CFR 180.414(b) and (c).

[See J. Stokes, memo, 2/13/95]

Comments and Conclusions

In its 6/10/94 response, the petitioner has requested that the term "from chicken layers hens and chicken breeder hens only" be removed from 40 CFR §180.414 (b) and (c). The established 0.05 ppm tolerances for the residues of cyromazine and melamine in poultry remain unchanged. The petitioner has requested to amend 40 CFR §180.414(b) as follows:

fat, poultry	.	.	.	.	0.05 ppm
meat, poultry	.	.	.	.	0.05 ppm
meat by-products of poultry	.	.	.	.	0.05 ppm

and to amend 40 CFR §180.414(c) as follows:

fat, poultry	.	.	.	.	0.05 ppm
meat, poultry	.	.	.	.	0.05 ppm
meat by-products of poultry	.	.	.	.	0.05 ppm

Deficiency 4b is resolved. However, when CFR 40 §180.414 (b) and (c) are revised the appropriate wording should be "poultry, fat; poultry, meat; and poultry, mbyp".

Deficiencies 4c and 4d

4c) Combined residues of cyromazine and its metabolite melamine are likely to occur in meat and meat by-products of hogs and horses [§ 180.6 (a) (1)]. As a result, tolerance proposals are needed and should be submitted. The tolerances can be included under § 180.414(a) and the levels are as follows:

meat and meat by-products of hogs and horses	0.05 ppm
fat of hogs and horses	0.05 ppm

4d) The exact expression for the tolerance in livestock meat, fat, and meat by-products will be decided after we have reviewed the 1-methylcyromazine study requested in Conclusion 2b and TB has been consulted for their opinion. Assuming 1-methylcyromazine will be part of the tolerance expression, combined residues of cyromazine and its metabolites 1-methylcyromazine and melamine are likely to occur in milk and meat of livestock (except poultry, horses, hogs) [§ 180.6 (a) (1)]. Therefore, tolerances are needed to cover such residues. The petitioner should submit a revised Section F proposing the following tolerances:

...combined residues of the insecticide cyromazine (N-cyclopropyl-1,3,5-triazine-2,4,6, triamine) and its metabolites melamine (1,3,5-triazine-2,4,6, triamine) and 1-methylcyromazine, each calculated as cyromazine, in or on the following raw agricultural commodities:

meat and meat by-products of cattle, goats and sheep	0.50 ppm
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fat of cattle, goats, and sheep

0.05 ppm

These tolerance levels (Conclusions 4c and 4d are high enough to cover residues resulting from feed items of this petition (PP#6F3332); tomato pomace (PP#6F3333) and those of carrots (6F3329).

Petitioner's Response

Tolerance expressions for milk and livestock meat, fat, and meat by-products were addressed in the review of petitions for tolerance in or on carrots and tomatoes cited in 1c (Agency review memorandum dated 4/2/93). Tolerance expressions now being proposed, taking into account withdrawal of the petition for tolerance on carrots (letter to the Agency dated 6/10/94) and including the proposed sweet corn and radish tolerances are:

Amend §180.414(b) [residues of cyromazine alone] to include...

Meat, fat, and meat by-products of cattle, goats, hogs, horses, and sheep 0.05 ppm

Milk 0.02 ppm

Amend §180.414(c) [residues of melamine alone] to include...

Meat, fat, and meat by-products of cattle, goats, hogs, horses, and sheep 0.05 ppm

Milk 0.02 ppm

Create §180.414(e), for tolerances of 1-methylcyromazine (1-methyl-N-cyclopropyl-1,3,5-triazine-2,4,6-triamine), calculated as cyromazine, in

Liver and kidney of cattle, goats, hogs, horses, and sheep 0.05 ppm

These tolerance expressions were proposed in Ciba's response to review of the tomato and carrot petitions submitted on 6/10/94. They are to be found in Volume 5 of the submission containing revised Sections B and F. [See J. Stokes, memo, 2/13/95]

[The submission of 6/10/94 contains these additional comments in regard to the proposed animal tissue tolerances.]

The petitioner has withdrawn the request to establish a tolerance on carrot. The exclusion of carrot from the dairy and beef cattle diets greatly reduces the need expressed previously by CBTS to increase petitioner's proposed milk tolerances of 0.02 ppm for cyromazine and 0.02 ppm for melamine to 0.05 ppm. The petitioner agrees with CBTS that the other tolerances for meat and meat by-products should be established at 0.05 ppm, and not at the petitioner's proposal of 0.1 ppm.

b

[See J. Stokes, memo, 2/13/95]

Comments and Conclusions:

The revised proposed tolerances have been accepted in CBTS's review of the 6/10/94 submission in regard to PP's 6F3329 and 6F3333/2H5640 (See J. Stokes, memo, 2/13/95). However, our comments regarding the appropriate nomenclature for the raw agricultural commodities apply here also.

Deficiencies 4c and 4d are now resolved.

Deficiency 5

On the third page of the proposed use (page not numbered) under Rotational Crops, there is no preplant interval stated. The petitioner should clarify his intent with respect to a preplant interval.

Petitioner's Response

A 30-day preplant interval ("plant-back interval" or interval from last application to planting of the rotational crop), is supported by the data submitted with this petition, ABR-85095 (Accession No. 260662) and related Analytical Reports (AG-A Reports). Plant-back intervals for sweet corn averaged 34 days and ranged from 14 to 48 days. Plant-back intervals for radishes averaged 27 days and ranged from 1 to 48 days. Last application and planting dates for the individual field tests are summarized in Table I.

Comments and Conclusion

Section B has been revised to include the following instructions regarding rotational crops:

All crops on this label may be planted following harvest of a Trigard treated crop. Do not rotate to any other crop, except sweet corn or radishes. Do not plant sweet corn or radishes within 1 month after the last application.

This deficiency is resolved.

Deficiency 6

Not knowing how uses on future registered crops will affect the proposed rotational crop tolerances in this petition, Section B should be revised under Rotational Crops from "Do not rotate to any other crop, except sweet corn or radishes" to "In addition to the crops on this label celery and lettuce can be rotated to sweet corn and radishes"

Petitioner's Response

The current label statement on Trigard 75WP is as follows:

7

"All crops on this label may be planted following harvest of a Trigard treated crop. Do not rotate to any other crop, except sweet corn or radishes. Do not plant sweet corn or radishes within 3 months after the last application."

In light of the data submitted, this current label statement should now be revised to: "All crops on this label may be planted following harvest of a Trigard treated crop. Do not rotate to any other crop, except sweet corn or radishes. Do not plant sweet corn or radishes within 1 month after the last application." Section B has been revised accordingly and is contained in another volume with this submission.

#### Comments and Conclusion

See comment and conclusion to the response to deficiency 5. This deficiency is resolved.

#### Additional Comment

The tolerances requested in this petition are for inadvertent residues resulting from planting rotational crops after cyromazine treated crops. The tolerance expression, accordingly, should be a separate paragraph of 180.414 headed: Indirect or inadvertent tolerances.

The tolerance expression should incorporate language to the effect:

"Tolerances are established for the indirect or inadvertent combined residues of cyromazine and its metabolite melamine in and on the raw agricultural commodities when present therein as a result of the application of cyromazine to growing crops listed in paragraphs (x) and (y) of this section.

Corn, sweet (K+CWHR)	0.50 ppm
Corn, sweet, forage	0.50 ppm
Corn, sweet, fodder	0.50 ppm
Radishes, root	0.50 ppm
Radishes, tops	0.50 ppm

cc: R.F.; Garbus; PP#6F3332, circ.  
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