

US EPA ARCHIVE DOCUMENT

PMSD/ISA
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RESIDUE CHEMISTRY BRANCH, HED
DATA REVIEW QUICK FORM

JUL 21 1988

Date: _____

MEMORANDUM

SUBJECT: Petition Review for Establishment
of Tolerance(s).
Evaluation of Analytical Method(s)
and Residue Data.

FROM: Stephanie H. Willett, Chemist *SHW*
Tolerance Petition Section II
Residue Chemistry Branch
Hazard Evaluation Division, TS-769C

THRU: J. H. Onley, Ph.D., Section Head *J. Onley*
Tolerance Petition Section II
Residue Chemistry Branch
Hazard Evaluation Division, TS-769C

TO: Hoyt Samerson PM 4:30
Registration Division, TS-767C

and

Toxicology Branch
Hazard Evaluation Division, TS-769C

1. Petition No(s): 8E 3641
2. RCB No(s): 3945
3. MRID No(s): _____
4. Pesticide(s): Diazinon
5. Tolerance Proposal (RACs & Levels): 0.5 ppm on pistachio
6. Petitioner: IR-4 and the Ag. Exp. Station of California

7. Tolerance Expression: 0,0-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate
8. Established Pesticide Tolerances: 40 CFR 180.153 on various commodities at levels ranging from 0.1 to 60 ppm
9. Established Food Additive Tolerances: 21 CFR 193.142 in food handling establishments
10. Established Feed Additive Tolerances: 21 CFR 561.415 in seed handling establishments
11. Is Pesticide a Registration Standard Chemical? (Yes/No)
If yes, date Guidance Document issued: Residue Chemistry chapter August 6, 1990
12. Letter(s) of Authorization (if applicable): From Carolyn B. Bussey of Ciba-Geigy Corporation (3/1/88); authorizes use of all diazinon data submitted by Ciba-Geigy in support of this minor use petition
13. Formulation(s): D.z.n Diazinon-50W (EPA Reg No. 100-460) and D.z.n AG 500 (EPA Reg No. 100-461)
14. Inerts Status: all are cleared under 40 CFR 180.1001 (see memoranda of T. McLaughlin 10/18/78 and E. Haberer 2/10/84)
15. Manufacturing Process: adequately described for the purposes of this petition (see memoranda of T. McLaughlin, dated 10/18/78 and E. T. Haberer, dated 2/10/84)

16. Proposed Use(s): Post Harvest or Dormant Spray (Dilute or Concentrate)

For the control of scale insects (*Parthenolecanium* spp.), mix 1 lb.* D'Z'N diazinon 50W plus 1 gal. of superior type oil per 100 gals. of water and apply as a dilute spray (at the rate of 400 gals. per acre). As a concentrate spray use 4 lbs. D'Z'N diazinon 50w plus 4 gals. of superior type oil per acre (in a minimum of 80 gals. of water per acre). Apply as a single post harvest spray in late October or early November or apply as a dormant spray. Do not make more than one application per year. Do not apply after February 1. Apply by ground equipment only. Apply a maximum of 4 lbs. of D'Z'N diazinon 50W plus 4 gals. of superior type oil per acre.

1 lb diazinon 50W =
0.5 lb. a.i.

For the control of scale insects (*Parthenolecanium* spp.), mix 1 pint* of D'Z'N diazinon AG500 plus 1 gal. of superior type oil per 100 gals. of water and apply as a dilute spray (at the rate of 400 gals. per acre). As a concentrate spray use 4 pints of D'Z'N diazinon AG500 plus 4 gals. of superior type oil per acre (in a minimum of 80 gals. of water per acre). Apply as a single post harvest spray in late October or early November or apply as a dormant spray. Do not make more than one application per year. Do not apply after February 1. Apply by ground equipment only. Apply a maximum of 4 pints of D'Z'N diazinon AG500 plus 4 gals. of superior type oil per acre.

* 1 pint Dzn AG500 =
0.5 lb a.i.

17. Plant Metabolism Data on: spinach, beans, tomatoes, alfalfa,
kale

18. Plant Residues Comprised of: diazinon, diazoxon,
2-isopropyl-4-methylpyrimidin-6-ol and hydroxydiazinon

19. Plant Metabolism Data Translatable Here: See item 17 above.

20. Nature of Plant Metabolism on the Subject RAC(s) of This Petition

is/ is not adequately defined since a post harvest or dormant use to the pistachio trees is involved.

The Residue of Concern is: parent only, for the purposes
of this petition. Additional plant metabolism data are
required for the purposes of reregistration (see
Reg. Std., 8/6/86, Residue Chemistry Chapter).

21. Animal Metabolism Data on: N/A
22. Animal Residues Comprised of: N/A
23. Animal Metabolism Data Applicable Here: N/A
24. Nature of Animal Metabolism Data is/is not adequately defined.
The Residue of Concern is: N/A
25. Analytical Method(s) (Give Reference and/or Brief Description)
Adequate sulfide, phosphorus, pyrimidine, cholinesterase inhibition, GC, and G/C methods are available (see Reg. Std. Residue Chemistry Chapter, 8/6/86). Method II(a) in PAM, Vol. II is recommended for regulatory purposes. The method involves extraction of diazinon with petroleum ether. Diazinon is then extracted from the solvent into 48% hydrobromic acid. Boiling of the acid converts diazinon sulfide to hydrogen sulfide which is collected in a zinc acetate solution. The sulfide content is determined spectrophotometrically as methylene blue. Additional clean-up steps are outlined for meats and fats (Method II (b)) and crops with higher thiol content (Method II (c)).

26. Has there been a Method Trial? (Yes, No) yes

If yes, provide details: on green sweet peas, hay and forage (PP 232, 1961). See also Reg. Std., residue chemistry chapter.

If no, is a Method Trial needed? N/A

27. Residues Determined by Method(s): parent only

28. Method Validation (RACs/"spike chemical"/fortification level(s)/ recovery range/average recovery):

green peas, hay and forage / diazinon / 0.75 - 15 ppm / 99-10970 (pea), 99-10370 (hay), 15-6670 (forage)

29. Method Validation (limit of detection and/or sensitivity in ppm):

Parent: 0.01 - 0.03 ppm

Metabolite(s) (specify): _____

30. Method Validation (state crops and control values reported):

alfalfa and corn leaves - 0.02 ppm

almond hulls and pea forage - 0.03 ppm

31. Adequate Analytical Method(s) are are not Available for Enforcement Purposes.

These Method(s) are located: PAM II, Method II

32. PAM I Multiresidue Methods Data are available for parent pesticide tested via Protocols I II III IV (circle, as applicable).

Additional multiresidue test information for parent compound that is needed: N/A

33. PAM I Multiresidue Methods Data are available for metabolite(s) tested via Protocols I II III IV (circle, as applicable).

Additional multiresidue test information for metabolite(s) that is needed: N/A

34. Residue Data (RAC(s) and Processed Commodities)

No residue data were submitted. The petitioner reasons that since tolerances for diazinon have been established for the representative crops of the Tree Nuts Group (almond, pecan and English walnut), no residue data should be required on pistachio. The proposed use specifies one post harvest or dormant application per season (2 lb ai/A) and a PHI of about 200 days.

The Registration Standard indicates that the available data are inadequate to support the established tolerance of 0.5 ppm on pecans, almonds & walnuts. Use rates range from 0.5 - 3 lb ai/A. Applications has typically been as multiple applications. PHI's ranged from 0 to 60 days. Residue data are inadequate for most other crop types as well.

35. Frozen Storage Stability Data are are not Available. ^{See Registration Standard}
If yes, give RACs/fortification levels/length of storage/recovery range/conditions of storage (°C): _____

36. Regional Registration is is not involved.

If yes, list States in which use is sought: California

If yes, indicate/explain (see 51 FR 11341, 4/2/86 - Policy on Minor Uses) if a bona fide "Minor Use" is involved: Pistachio is a minor crop listed in unit I.A, p 11343. Geographically limited data acceptable.

37. Geographic Representation is is not adequate. If no, list RAC(s) and States from which additional data are needed: pistachio in California. (see also # 44)

38. Residues will not exceed proposed tolerance(s) on (commodities)

but may exceed proposed tolerance(s) on (commodities) _____

pistachios

39. Livestock Feeding Studies on (species): N/A. Crop is not an animal feed item.

40. Animal Feeding Levels: N/A
41. Animal Residue Ingestion Levels from Proposed RAC Tolerance(s) N/A
Levels (proposed tolerance level x percent in diet): _____ ppm
in beef cattle; _____ ppm in dairy cattle/goats; _____ ppm in
hogs; _____ ppm in horses; _____ ppm in sheep; _____ ppm in
poultry.
42. Livestock Tolerances are Adequate in (species) N/A
but not adequate in N/A
43. Livestock Tolerances Need to be Established: Yes/No. If yes,
species/levels: N/A
44. Other Comments: A comprehensive Data Call-In Notice
(DCI) was issued in May 1987. A crop group tolerance
on the tree nuts group has not been established (see Reg Std).
RCB recommended that pistachio not be included in the tree nut
group (see memo of R. Cook dated 2/28/85).
45. Other Considerations: Because both the historical ADI and
the current PADL are greatly exceeded by the TMRC from
present tolerances, it has been recommended that no
additional tolerances be granted for diazinon (see
Diazinon cover memo of E. Saito, page 7, dated 5/2/88).
Note to PM: See also Addendum to the Residue Chemistry
Chapter for Diazinon Registration Standard: Tolerance
Assessment System Tolerance Reassessment - 5/27/88.
46. Additional Information Needed: _____

47. Additional Data Needed:

1) Residue Data 2) Storage Stability Data
(See also # 49)

48. RECOMMENDATIONS: against the tolerance of 0.5 ppm on pistachios. See #'s 34, 35 and 45.

49. Other Comments Under Recommendations: It may be possible for the petitioner to seek a tolerance at the sensitivity of the enforcement method, but this tolerance must be supported by appropriate residue data and should receive the approval of TB prior to generating residue data (see item 45 above).

50. Compatibility with Codex Tolerances? (Explain)

There are no Codex, Mexican or Canadian limits for diazinon on pistachio. Therefore, no compatibility problems exist.

ATTACHMENT(S): (1) International Residue Limits Status Sheet

(2)

cc: RF, Circ, Reviewer, PP# BE 3641

PMSD/ISB, Reg. Std. Boodee

Approved: J.H. Onley 7/21/88; RDSchmitt

Boodee 7/21/88

INTERNATIONAL RESIDUE LIMIT STATUS

0

CHEMICAL Diazinon

CODEX NO. 32

CODEX STATUS:

No Codex Proposal
Step 6 or above (on pistachio)

Residue (if Step 8): _____

diazinon

Crop(s)

Limit
(mg/kg)

PROPOSED U.S. TOLERANCES:

Petition No. 8E 3641

RCB Reviewer S. H. Willett 7-6-88

Residue: diazinon* parent

only

Crop(s)

Limit
(mg/kg)

pistachio

0.5

CANADIAN LIMITS:

No Canadian limit (on pistachio)

Residue: _____

diazinon

Crop(s)

Limit
(mg/kg)

MEXICAN LIMITS:

No Mexican limit (on pistachio)

Residue: _____

Crop(s)

Limit
(mg/kg)

NOTES:

* O,O-diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate

(10)