

9 APR 1987

PMSD/ISS
1496L

RESIDUE CHEMISTRY BRANCH, HED
PETITION REVIEW QUICK FORM

FROM: Maxie Jo Nelson, Ph.D., Chemist
Residue Chemistry Branch
Hazard Evaluation Division (TS-769)

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

TO: Robert J. Taylor, PM 25
Registration Division (TS-767)

and

Toxicology Branch
Hazard Evaluation Division (TS-769)

1. Petition No(s):: 6F3452 [RCB# 1622][Acces.# 264612-3]
2. Chemical(s): Sethoxydim
3. Tolerance Proposal (RAC's & Levels): cucurbit vegetables
@ 2 ppm; Brassica leafy vegetables @ 9 ppm.
4. Petitioner: BASF Corporation
5. Tolerance Expression: combined residues of parent and metabolites
containing the 2-cyclohexen-1-one moiety (calculated as parent)
6. Established Tolerances: 40 CFR 180.412; 21 CFR 561.430
0.05-15 ppm in/on various commodities of plant and animal origin
7. Letter(s) of Authorization (if applicable): N/A
8. Formulation(s): Poast[®] Herbicide (EPA Reg. No. 7969-58),
an emulsifiable concentrate containing 20% by wt. a.i.
9. Inerts Status: all cleared under 40 CFR 180.1001.

10. Manufacturing Process: Was discussed in 12/4/80 review, E. Zager, PP# 0G2396. Technical product is $\geq 95\%$ pure. Impurities are not expected to present a residue problem.
11. Proposed Use(s): For annual and perennial grass weed control. Make 1-2 applications @ 1-1.5 pts (0.2-0.3 lb ai)/A plus 2 pts oil concentrate/A by ground sprayer (5-20 gpa. spray solution) or aerial equipment (5-10 gpa. spray solution). Do not apply more than 3 pts (0.6 lb ai)/A/season. 14-day PHI for cucurbits group and 30-day PHI for Brassicas. Broadcast, foliar sprays with thorough coverage. Rate depends on weed species and location; timing of applications on weed height. See labels for more details.
12. Plant Metabolism Data on: tomatoes (PP# 5F3284), soybeans and alfalfa (PP# 3F2904), and sugar beets (PP# 3F2950).
13. Plant Residues Comprised of: parent plus several metabolites containing the 2-cyclohexen-1-one moiety.
14. Plant Metabolism Data Translatable Here: # 12
15. Nature of Plant Metabolism Data (is) is not adequately defined. The Residue of Concern is: per #5.
16. Animal Metabolism Data on: N/A. There are no animal feed items associated with this petition.

17. Animal Residues Comprised of: N/A. See #16.
18. Animal Metabolism Data Applicable Here: N/A. See #16.
19. Nature of Animal Metabolism Data is/is not adequately defined.
The Residue of Concern is: N/A. See #16.
20. Analytical Methods (reference or brief description):
BASF Methods 30B and 30G (FPD-GLC).
Both are discussed in 6/26/85 review, K. Arne, PP# 3F2904.
Method 30 was successfully MTO'd in re PP# 2F2670 (see
4/1/83 memo, K. Zee).
Method 30 and its variants (including B and G) are all similar.
Method 30 is the enforcement method of PAM II.
21. Method Validation (crop recoveries): cucumbers, cantaloupe, squash,
cabbage, broccoli, cauliflower, and mustard greens were fortified with 0.05-5.0 ppm
of sethoxydim, sethoxydim sulfoxide, and 5-OH-MSO₂ (the most common
hydroxylated plant metabolite of sethoxydim). Recoveries ranged: 72-98%,
52-108%, and 56-124%, respectively.
22. Method Validation (control values): were provided for each plant
matrix listed in #21. NDR were reported in any sample. Sensitivity = 0.05 ppm
(via 30B) and 0.1 ppm (via 30G) for each component measured (DME and OH-DME).
23. Residues Determined by Method: Parent and regulable metabolites
as the dimethyl ester (DME) and hydroxy-DME derivatives of pentane-
dic acids. (See discussion in PAM II, Method I.)
24. Enforcement Methodology (is) is not available. In PAM II.

25. Residue Data (crop and residue range—(ppm) from Proposed Use):		Total residue (uncorrected)			
* representative Cucurbits Crop:	* cucumbers	< 0.1 - < 0.62 ppm	13-37 (93) day PHI	15 studies; 9 states	
	* squash	< 0.1 - < 0.81 ppm	8-40	" "	12 " ; 10 "
	* cantaloupe	< 0.1 - < 1.1 ppm	15-54	" "	10 " ; 6 "

Brassicac Crop:	* cabbage	< 0.2 - 1.8 ppm	12-34 (83)	" "	16 " ; 11 "
	* broccoli	< 0.2 - 5.1 ppm	24-40 (83)	" "	7 " ; 5 "
	* cauliflower	0.26 - 0.87 ppm	27-31	" "	2 " ; 2 "
* representatives of crop group	* mustard greens	< 0.22 - 1.6 ppm	14-31	" "	5 " ; 5 "

field trials from 1983-85 for each crop group

cucurbits: 1-2 applications @ 0.2-2.0 lbs ai/A/application

Brassicac: 1-3 " " 0.5-1.0 " " "

majority of field trials were 0.3 lb ai/A/application, 2 applications.

Other Comments:

① By translation of frozen storage stability data from other crops (soybeans, strawberries) stored up to 31 months, adequate frozen storage stability data are available.

② The method of application (air or ground) was not specified, and must be. If no aerial data are available, proposed labeling must be limited to ground application. (Ref. 11/25/86 review, C. Deyrup, P# 5F3284.)

26. Residues will not exceed proposed tolerance on (commodities) the cucurbits crop group, and field trial data have been submitted on the 3 representative commodities of that group. We consider the proposed 2 ppm tolerance to be adequate and appropriate in conjunction with the proposed use.

The proposed tolerance (9 ppm) on the Brassicac leafy vegetables crop group, for which data on all the representative commodities were submitted, is too high in conjunction with the proposed use. A tolerance proposal of 5 ppm would be more appropriate. A revised Section F is needed.

27. Livestock Feeding Studies on (species): N/A. See #16.

28. Animal Feeding Levels: N/A. See #16.

29. Animal Residue Ingestion Levels from Proposed Crop Tolerance Levels (proposed tol. level x % in diet): _____ ppm in beef cattle; _____ ppm in dairy cattle/goats; _____ ppm in hogs; _____ ppm in horses; _____ ppm in sheep; _____ ppm in poultry.

30. Livestock Tolerances are Adequate in (species) _____

_____, but not adequate in _____

31. Livestock Tolerances Need to be Established: yes/no. If yes (species/levels): N/A. See #16.
32. Other Comments: ① There is no Registration Standard on this chemical. ② See 40 CFR 180.34(f)(9)(v and ix) for a listing of the RACs in the Brassica and cucurbits crop groups. ③ There is adequate geographic representation.
33. Other Considerations: Sethoxydim has not been tested for recovery via the FDA multiresidue protocols, as required by 40 CFR 158.125(b)(15). The petitioner is referred to Appendix II of PAM I for information on these protocols and for reporting forms.
34. Additional Data Needed: If no aerial application data are available on these crops, the petitioner may conduct appropriate field trials to generate such data in lieu of restricting the label to ground applications only.
35. Recommendations: We recommend against the establishment of the proposed tolerances for the reasons cited in Conclusions 25, 26, and 33, which see for a discussion of what is required of the petitioner for further consideration of this petition.
36. Other Comments under Recommendations: The petitioner should be advised of the option open to him, as discussed in Conclusion 34.
37. Compatibility with Codex Tolerances: N/A. See Attachment. There are no Codex tolerances established for sethoxydim.
- Attachment: International Residue Limit Status Sheet

cc: RF, Circ, Reviewer, Thompson, TOX, EEB, ERB, FDA, PP#6F3452, RMSD/ISB.
 Approved: Quick R/I RM 4/6/87 ; Schmitt ADL 4/6/87

INTERNATIONAL RESIDUE LIMIT STATUS

CHEMICAL Sethoxydim

CODEX NO. _____

CODEX STATUS:

☒ No Codex Proposal
Step 6 or above

Residue(if Step 8): _____

<u>Crop(s)</u>	<u>Limit</u> <u>(mg/kg)</u>
----------------	--------------------------------

PROPOSED U.S. TOLERANCES:

Petition No. GF3452

RCB Reviewer MJN

Residue: parent plus metabolites,
per 40 CFR 180.412

<u>Crop(s)</u>	<u>Limit</u> <u>(mg/kg)</u>
----------------	--------------------------------

cucurbit vegetables	2
---------------------	---

Brassica leafy vegetables	9
------------------------------	---

CANADIAN LIMITS:

☒ No Canadian limit (on above
commodities)

Residue: parent + metabolites contain-
ing the cyclohex-2-enone moiety calc,
as parent *

<u>Crop(s)</u>	<u>Limit</u> <u>(mg/kg)</u>
----------------	--------------------------------

MEXICAN LIMITS:

☒ No Mexican limit

Residue: _____

<u>Crop(s)</u>	<u>Limit</u> <u>(mg/kg)</u>
----------------	--------------------------------

NOTES: * Definition for tolerances on other commodities