

AUG 21 1987

1766

RESIDUE CHEMISTRY BRANCH, HED  
PETITION REVIEW QUICK FORM

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

mjr

THRU: Robert S. Quick, Section Head  
Residue Chemistry Branch  
Hazard Evaluation Division (TS-769)

pmf

TO: Hoyt Jamerson, PM 43  
Registration Division (TS-767)

and

Toxicology Branch  
Hazard Evaluation Division (TS-769)

1. Petition No(s): 7E3549 RCB#: 2680 MRID#: 402727-00, -01
2. Chemical(s): Sethoxydim
3. Tolerance Proposal (RAC's & Levels):  
artichokes @ 3 ppm
4. Petitioner: IR-4 and Ag Exp Stn of CA
5. Tolerance Expression: combined residues of parent and metabolites  
containing the 2-cyclohexene-1- moiety (calculated as parent)
6. Established Tolerances: 40 CFR 180.412; 21 CFR 561.430.  
0.05-75 ppm in/on various commodities of plant and animal origin.
7. Letter(s) of Authorization (if applicable):  
6/26/87 - BASF Corporation
8. Formulation(s): Peast® Herbicide (EPA Reg. No. 7969-58),  
an emulsifiable concentrate containing 1.5 lbs ai/gal.
9. Inerts Status: Under RD purview.

10. Manufacturing Process: Discussed in 12/4/80 review, E. Zager,  
PP# OG-2396. Technical product is ≥95% pure. Impurities are  
not expected to pose a residue problem.
11. Proposed Use(s): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ Artichokes (CA only) - Recommendations for Grass Control \_\_\_\_\_  
 \_\_\_\_\_ For broad spectrum control of grasses, apply a \_\_\_\_\_  
 \_\_\_\_\_ postemergence spray with ground application equipment at \_\_\_\_\_  
 \_\_\_\_\_ the rate of 2.5 pints (0.47 lb ai) per acre when artichokes \_\_\_\_\_  
 \_\_\_\_\_ are in vegetative stage. If an additional grass control is \_\_\_\_\_  
 \_\_\_\_\_ needed, apply a second postemergence spray. Always add 2 \_\_\_\_\_  
 \_\_\_\_\_ pints of oil concentrate per acre. Oil concentrate must \_\_\_\_\_  
 \_\_\_\_\_ contain EPA exempt ingredients. Do not apply POAST to \_\_\_\_\_  
 \_\_\_\_\_ artichoke within 7 days of harvest. Do not spray more than \_\_\_\_\_  
 \_\_\_\_\_ 5 pints (0.94 lb ai) per acre per year. \_\_\_\_\_  
 \_\_\_\_\_ For additional information see POAST label in Section A. \_\_\_\_\_  
 \_\_\_\_\_ Based on available residue data this use is limited to \_\_\_\_\_  
 \_\_\_\_\_ California. \_\_\_\_\_
12. Plant Metabolism Data on: soybeans and alfalfa (PP# 3F2904),  
sugar beets (PP# 3F2950), and tomatoes (PP# 5F3284).
13. Plant Residues Comprised of: parent plus several metabolites  
containing the 2-cyclohexene-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):  
BASE Method 30 (FPD-GLC)  
This is enforcement method I in PAM II, g.v. for details.  
Successful MTOs in re PP# 2F2670 and PP# 3F2904.  
Two GLC peaks (DME and DME-OH) measured; see #23.  
Chromatograms and calculations are submitted.
21. Method Validation (crop recoveries): Artichokes  
Recoveries were 88-98% (N=8) from artichokes fortified with 0.1 or  
0.5 ppm of MSO (sethoxydim sulfoxide) + 5-OH-MSO<sub>2</sub> (5-hydroxy  
sethoxydim sulfone) metabolites, each.
22. Method Validation (control values): Artichokes  
NDR (<0.05 ppm) sethoxydim equivalents from DME  
" " " " " DME-OH
23. Residues Determined by Method: Parent and regulable metabolites  
as the dimethyl ester (DME) and hydroxy-DME derivatives of  
pentane-dioic acids. (See discussion in PAM II, Method I).
24. Enforcement Methodology (is) is not available. In PAM II,

(uncorrected)

Total Residue (from DME + DME-OH)

25. Residue Data (crop and residue range (ppm) ~~from Proposed Use~~):

Crop: Artichokes <0.14 - <0.45 ppm 1 x <sup>a.i.</sup>0.5# appkn, 7-day PHI

<0.73 - 1.35 ppm 1 x 1.0# " " (1X)

1.5 - 3.46 ppm 1 x 2.0# " " (2X)

All data are from one CA trial, 1984-85.  
oil concentrate was added at proposed use rate.  
samples were frozen-stored 18 months prior to analysis.  
4 replicates/treatment rate

Other Comments: Storage stability data are available on potatoes  
(26 months; PP# 7F3529) and soybeans (up to 27 months;  
PP# 3F2904) demonstrating adequate stability (avg 95% recovery).

26. Residues will not exceed proposed tolerance on (commodities)

artichokes @ 3 ppm

and will exceed proposed tolerance on (commodities)

N/A

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 \_\_\_\_\_

N/A

N/A

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 sethoxydim.  
 ② Artichokes is on the minor crops list (FR 51, 4/2/86, p 11344).
33. Other Considerations: Sethoxydim needs to be tested through FDA's multiresidue protocols (ref. PAM I). The registrant (BASF Corp.) has already been advised of this. (See, for example, 8/3/87 review of M. Nelson, PP# 7E3529, Item #33.)
34. Additional Data Needed: None. We waive #33 for purposes of this minor use petition.
35. Recommendations: Toxicological considerations permitting, we recommend in favor of the establishment of the proposed tolerance on artichokes @ 3 ppm.
36. Other Comments under Recommendations: This tolerance, if/when established, should be placed in the subsection of § 180.412 reserved for tolerances with regional registration.
37. Compatibility with Codex Tolerances: N/A. See Attachment.

Attachment: International Residue Limits Status Sheet

cc: RF, Circ, Reviewer, PMSD/ISB, TOX, PP# 7E3549, FDA.  
 Approved: Quick R/T/ML 8/21/87; Schmitt ML 8/21/87

INTERNATIONAL RESIDUE LIMIT STATUSCHEMICAL Sethoxydim

CODEX NO. \_\_\_\_\_

CODEX STATUS:

☒ No Codex Proposal  
Step 6 or above

Residue(if Step 8): \_\_\_\_\_

PROPOSED U.S. TOLERANCES:Petition No. 7E3549RCB Reviewer NelsonResidue: parent plus metabolites  
as described in 40 CFR 180.412

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

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

Artichoke

3

CANADIAN LIMITS:☒ No Canadian limit (on artichoke)

Residue: \_\_\_\_\_

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

MEXICAN LIMITS:☒ No Mexican limit

Residue: \_\_\_\_\_

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

NOTES: \_\_\_\_\_