

215177  
RECORD NO.

121001  
SHAUGHNESSEY NO.

REVIEW NO.

EEB REVIEW

DATE: IN 2-29-88 OUT SEP 21 1990

FILE OR REG. NO 7969-58

PETITION OR EXP. NO. \_\_\_\_\_

DATE OF SUBMISSION 1-12-88

DATE RECEIVED BY EFED 2-26-88

RD REQUESTED COMPLETION DATE 5-9-88

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RD ACTION CODE/TYPE OF REVIEW 335

TYPE PRODUCT(S) : I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S). \_\_\_\_\_

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) POAST (Sethoxydim)

COMPANY NAME BASF Corp.

SUBMISSION PURPOSE Proposed registration of blueberry and citrus  
uses

SHAUGHNESSEY NO.                      CHEMICAL, & FORMULATION                      % A.I.

121001                      sethoxydim                      18.0%

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EEB REVIEW

Chemical: Poast (sethoxydim)

100 Submission Purpose and Label Information

100.1 Submission Purpose and Pesticide Use

The registrant is requesting a Section 3 registration to add two new uses of Poast herbicide: blueberries and citrus.

100.2 Formulation Information

Active ingredient: Sethoxydim.....18%  
Inert ingredients.....82%

1.5 lb ai/gal

100.3 Application Methods, Directions, Rates

Submitted Supplemental Labeling indicates: ground application at a maximum rate of 2.5 pints Poast/A (0.47 lb ai/A); repeat application(s) as needed, up to 5 pints Poast/A/season for blueberries and 12.5 pints Poast/A/season for citrus. Poast and an oil concentrate are combined with water in a spray tank and applied at 5-20 gallons/A (see attached submission for details).

100.4 Target Organisms

Submitted Supplemental Labeling indicates a variety of annual and perennial grasses.

101 Hazard Assessment

101.2 Likelihood of Adverse Effects on Nontarget Organisms

As indicated in previous EEB reviews, sethoxydim is considered "practically non-toxic" to mammals, birds, and freshwater fish, and "slightly toxic" to aquatic invertebrates. At 0.47 lb ai/A, it is not expected to pose any substantial hazard to these nontarget fauna. For example, see the 5/31/88 EEB review which covers (for apples, pears, crabapples, and quince) the identical formulation and identical maximum application rate as in the current proposal.

Nontarget area phytotoxicity data are not available to complete an assessment for risk to nontarget plants (see 101.4 below). Blueberries and citrus are crops involving honeybee exposure (EEB 7/15/81 memo from A. Vaughan and R. Lee). A honeybee acute contact LD<sub>50</sub> test is needed to assess hazard (see 101.4 below).

101.3 Endangered Species Considerations

Because of the low toxicity to animal test species, hazard to endangered/threatened animal species is not expected under the proposed uses. However, substantial hazard is quite possible for any exposed endangered/threatened plant. Since such species

would not likely be found within the crop itself, the risk would be from drift and/or runoff.

Due to proposed ground application, drift would be considerably less than with aerial or air-blast sprays, for example. However, the proposed labeling instructs the applicator to adjust spray pressure between 40-60 psi (p.2). Above 40 psi, drift can potentially be a problem even with ground application (R. Petrie, personal communication). If the use could be restricted to < 40 psi, the likelihood of drift would be reduced, but runoff could still potentially be a problem.

Runoff can potentially be a problem, in part due to the reported water solubility of 48 ppm. R. Lee of EEB estimates that, for pesticides with a solubility of 10-100 ppm, approximately 2% of the applied amount can runoff.

At this time, EEB has no specific information that endangered/threatened plant species are in close enough proximity to either blueberry or citrus agriculture such that exposure could occur with ground application (L. Turner, personal communication). However, there are endangered/threatened plant species in at least some of the same counties in which these crops are grown. For example, a comparison has been made, for this review, of 22 counties with the most blueberry production [list in EEB crop file (D. Rieder, 2-6-90, using 1987 Census of Agriculture)] with a 5/12/89 endangered/threatened plant list by county (W. Gill). This comparison indicates seven species in 12 of these counties as follows:

<u>State</u>	<u>Counties</u>	<u>Species</u>
MI	Allegan	Pitcher's Thistle
	Berrien	" " ; Small Whorled Pogonia
	Muskegan	" "
	Ottawa	" "
	Van Buren	" "
NJ	Atlantic	Swamp Pink
	Burlington	" "
	Camden	" "
	Monmouth	" "
NC	Bladen	Rough-leaved Loosestrife; Pondberry
	Pender	" " ; Cooley's Meadowrue
OR	Marion	Bradshaw's Lomatium

An examination of the EEB files for these species (incl. Technical Bulletins and federal register notices) indicates that some have become endangered/threatened at least in part due to conversion of

their habitat to agriculture or are currently threatened by such conversion (e.g., Swamp Pink, Rough-leaved Loosestrife, Cooley's Meadowrue, Bradshaw's Lomatium). This implies that individuals remaining may be in relatively close proximity to agriculture.

Information is not adequate to say how near individual plants are to any agricultural fields, let alone specifically blueberries. This example is intended to be illustrative and not comprehensive. Any further analysis needed prior to consultation (e.g., for citrus, or further analysis for blueberries) can be conducted at that time.

In the 6/23/89 EEB review (D. McLane) of POAST on several agricultural sites, a county overlap (i.e., counties with the crops and those with endangered plant species) was likewise found. Tier I nontarget area phytotoxicity data were requested to complete a risk assessment. It is EEB's understanding that USFWS would expect or request this data in a consultation package from EEB (D. McLane, personal communication).

POAST is only labeled for control of grasses. However, it may very well still be toxic to non-grass species, but with levels of mortality lower than needed for control of non-grass weeds. Any mortality or other adverse effect would be of concern for endangered species. In the absence of strong data to the contrary, EEB assumes that all endangered plants will be adversely affected if exposed to any concentration of any herbicide (see 2/88 EEB evaluation flow chart).

Since EEB can assume toxicity to federally-listed plants from herbicides, the biggest information gap is concerning exposure. While some species may appear unlikely to be exposed based on habitat, others could be in the vicinity of the two proposed uses. Only USFWS potentially would have enough information to determine whether any species are in close enough proximity to blueberries and citrus that they could be adversely affected from the proposed ground applications. Consultation can be combined with that for the proposed crop uses of the 6/23/89 EEB review.

#### 101.4 Adequacy of Toxicity Data

No additional ecological effects data were submitted with the current review request.

Additional data required to review the current Section 3 proposal include:

- 1) §158.150 Tier I Nontarget area phytotoxicity data. These data have been previously requested in the 6/23/89 EEB review to complete the risk assessment for endangered plants. EEB has not yet received this data.
  - 122-1 Seed germination/seedling emergence
  - 122-1 Vegetative vigor
  - 122-2 Aquatic plant growth

Note: If the registrant has not already completed 122-2 above and elects to conduct 123-2 below, 122-2 would not be needed in addition.

2) §158.150 Plant protection data (Tier II is recommended since POAST is an herbicide.)

a) 123-2 Aquatic plant growth testing

-Selenastrum capricornutum

-Lemna gibba

Note: The Selenastrum test was specified by EEB in a 1/30/90 POAST review, due to the solubility of POAST. A Lemna test is now also required, to provide a second indicator species (C. Lewis, personal communication).

3) §158.155 Nontarget insect data

a) 141-1 Honey bee acute contact LD50

#### 101.5 Adequacy of Labeling

The main label was not submitted for review. The Supplemental label did not contain any environmental hazard labeling. Registration Division should ensure that standard aquatic and disposal labeling required for all outdoor use pesticides is on the main label.

Reducing the labelled nozzle pressure to 40 psi or less would reduce the likelihood of drift (see 101.3). Additional labeling or other measures to protect federally endangered/threatened plant species can be developed following formal consultation with the U.S. Fish and Wildlife Service.

#### 103 Conclusions

EEB has reviewed the proposed registration of POAST for use on blueberries and citrus. EEB concludes that the proposed use will result in minimal hazard to nontarget birds, wild mammals, and aquatic life. Additional data are needed to evaluate risk to nontarget plants and honeybees.

Endangered/threatened plants will very likely be at risk if exposed to POAST. Labeling or other measures to protect federally endangered/threatened plant species can be developed following formal consultation with the U.S. Fish and Wildlife Service.

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Sethoxydim ecological effects review

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Pages 7 through 29 are not included in this copy.

The material not included contains the following type of information:

- Identity of product inert ingredients
- Identity of product impurities
- Description of the product manufacturing process
- Description of product quality control procedures
- Identity of the source of product ingredients
- Sales or other commercial/financial information
- A draft product label
- The product confidential statement of formula
- Information about a pending registration action
- FIFRA registration data
- The document is a duplicate of page(s) \_\_\_\_\_
- The document is not responsive to the request

The information not included is generally considered confidential by product registrants. If you have any questions, please contact the individual who prepared the response to your request.